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ART. I.—ANATOMICO-ANTHROPOLOGICAL OBSERVATIONS UPON THE BODY OF A NEGRO.*

"ALI MARDJAN", whose body served for these observations, was a fine robust Negro, aged thirty-five years. His origin was unknown; yet it is probable that he was a native of Darfour, or of Kordofan. Being still a child, he was bought, more than twenty years before, at Constantinople, by the Hospodar Al. Ghica, and brought up at his court, where he was a slave for more than a dozen years. Lastly, being emancipated, he entered into the service of different boyards in the capital; and, latterly, he was often seen lounging in the streets and the cabarets, till May 1866, when he was taken seriously ill, and being admitted into the Colza Hospital, at Bucharest, he died at the end of twelve hours.

His body was placed in my hands for dissection. Unfortunately, it was during a time of frightful heat, the thermometer indicating 113 deg. to 118 deg. Fahr.; and, besides, all the first day was lost in moulding the casts of his bust, his hand, and his foot. It was only on the second day, in the midst of excessive heat, that I was able to make the autopsy, in a miserable barrack made of planks.

The *structure of the body*, the stature being only 5 feet 3·2 inches, was slight yet robust. The prominences of the muscles and bones proper to his sex were but little pronounced, so that his external form was rather round and smooth, almost feminine.

The *skin*, very smooth and unctuous to the touch, was per-

* Anatomiczno-Antropologiczne Postrzezenia nad Murzynem opisal Dr. Izydor Kopernicki. Krakowie, 1870. From the *Annals* of the Society of Sciences of Cracow. Tom. xli.

fectly black (Nos. 41-48 of the Chromatic Scale of the Society of Anthropology of Paris). In certain regions, as the abdominal, lumbar, and sacral, the colour was deeper (No. 48, Chromatic Scale); and upon the scrotum and the penis it was quite black. On the contrary, the palms of the hands and the soles of the feet had a much less intense colour (Nos. 43-37), an ash-brown tint. This colour extended from the palms of the hands upwards to the fold of the hand with the forearm, as well as downwards upon the palmar and lateral faces of the fingers. The dorsal surface of the hand and fingers was very deep (No. 27). A similar colouration was observed upon the soles and dorsa of the feet. There were two corns upon the great and little toes, the colour of which was much deeper than that of the surrounding skin (Nos. 41-48).

Upon the thorax and extremities, there were very small cicatrices, which did not penetrate through the skin. Among these cicatrices, the oldest were as black as the surrounding skin, whilst the more recent ones were relatively paler (Nos. 30 and 30-39).

The *hair*, everywhere black (No. 48), varied, as to abundance and aspect, in different regions. Thus, as to its abundance. Upon the hairy scalp it sprung up in a very sudden and marked manner from the perfectly smooth surface of the surrounding skin, quite devoid of hair. The hair of the head terminated, before, very high up on the forehead; behind, it ended just upon the semicircular line of the occiput. On the temples, on the contrary, it descended much lower, and ended in thin striæ of hairs, which fringed the border of the jaw, coming down to the beard. Abundant hair covered all the chin, with the region below the chin, and extended to the angles of the jaw. Lastly, the pubis was poorly provided; and in the arm-pits there were some small tufts of crisp hair scattered about.

As to what concerns the aspect and character of the hair. That of the head was composed of little thin tufts of very crisp twisted hairs, disseminated in flocks scattered over all the surface of the scalp. These flocks were only from four to seven millimètres in thickness, and from six to twelve in length.

The whiskers were represented by a very narrow band of little scattered flocks. The beard, on the contrary, was composed of very abundant hair; the entire sub-mental region being covered

with very dense crisp hair, twice as thick and long as that of the head. The chin, up to the lower lip and all along the jaw, was richly provided with hair from thirty to sixty millimètres in length (one inch to two inches and a half), which was very elastic, and less crisp than that upon the head. The tufts of pubic hair were quite similar to those of the crisp moustachios, a little longer and more dense towards the root of the penis.

The *cellular tissue* was everywhere very abundant, dry, and, in those parts devoid of fat, presented a distinct white colour.

The *adipose tissue*, very abundant everywhere, even between the muscles, was of a lively deep yellow colour, quite similar to the colour of pure yellow wax. This colour was of a much deeper shade in the subcutaneous layers, than in the deeper ones between the muscles.

The *muscles*, of an icteric colour, light yellow, were moderately developed, but consistent and hard. As far as it was possible for me to determine in so precipitate a review, they did not present any remarkable anomalies. Neither were the masseters larger and more round, nor were the stylo-hyoid muscles less developed, as Soemmerring* and Serres† observed. No more did I meet with the least trace of the particular muscle between the cartilages of the third to the sixth ribs, which, according to Soemmerring,‡ was twice observed in Negroes, by Bonn and Sandifort. The fleshy portion of the gastrocnemii muscles was, nevertheless, more prominent in my Negro, and the tendinous portion began higher up, than ordinary.

The *blood* found in the heart and large vessels was dense and coagulated, and its serosity was of a vivid yellow colour, like saffron. The clots were black, viscous, semifluid. The fibrinous clots were yellow, as in jaundice, soft and friable. The heart itself was dilated and fatty. The position, the calibre, and the ramification of the principal blood-vessels did not present any deviations. The arteries and the veins of secondary order, as far as could be observed without artificial injection, did not present anything particular.

The *lymphatic glands* were everywhere very little developed.

As to the *membranes of the brain*, the dura mater did not offer

* *Ueber die Körporliche Verschiedenheit des Negers von Europäer* 1785.

† *Bull. de la Soc. d'Anthropol. de Paris.* Tom. ii, 1861. P. 65.

‡ *Op. cit*, p. 32.

anything remarkable, nor did the pia mater, upon which an attentive search did not produce a single spot deeper than the rest of its surface. The arachnoid equally, save its inflammatory thickening, did not present anything particular.

The *brain*, deprived of its pia mater, and attentively compared with the encephalon recently extracted from the skull of an adult Wallachian woman, did not present the least difference in the colour of its white and grey substances. The cerebral folds, excepting those which are found at the bottom of the fossa Sylvii, and which were less developed in the brain of our Negro, were as numerous, perhaps even more numerous and varied, than in the brain of the Valaque woman. Nevertheless, the sinuosities of these folds were evidently less deep in our Negro than in brains of Europeans. The two cerebral hemispheres, a little depressed above, extended backwards to the border of the cerebellum. The pons Varolii and the pedunculi cerebri had the common volume and form. The cerebellum, of the usual volume, was considerably flattened. Its laminæ were broader and more prominent than ordinary. The medulla oblongata a little more slender. The corpora olivaria, small, but very prominent, presented, on being cut, the indentations of their grey substance much deeper than usual.

The *weight of the brain*, deprived of its membranes, was 955 grammes, of which 480 grammes belonged to the right hemisphere and 475 to the left. The cerebellum, with the annular protuberance, and the medulla oblongata not deprived of its membrane, weighed 150 grammes. The entire encephalon weighed 1105 grammes.*

The spinal marrow was not explored because I wished to preserve the skeleton.

The comparison of the *thickness of the nerves* of the peripherical, cerebral, and spinal nerves in the Negro, and in a Valaque of the same stature and constitution, measured at points perfectly analogous, is represented in the following table.

	VALAQUE. Millimètre.	NEGRO. Millimètre.
Nervus olfactorius	3-3½	4-4½
„ opticus	5	5
„ oculomotorius	2	2

* 1105 grammes are equal to thirty-nine ounces avoirdupois. This is a low weight, the average weight in African races in general being 1244 grammes.

	VALAQUE. Millimètre.	NEGRO. Millimètre.
Nervus trochlearis	1	1
„ trigeminus, totalis	5½	6½
„ „ portio min.	1½	2
„ facialis	2¼	1¾
„ acusticus	3¾	3¾
„ abducens	1½	1¾
„ optic. chiasma, length	6	5
„ „ breadth	13	15
Tractus optici	5	6¼
Nervus hypoglossus	2½	2½
„ vagus	2½	2¾
„ acces. Willisii	2	2
„ medianus	4½	5
„ ulnaris	3	3
„ radialis	4	4½
„ musc. cutan.	2	2½
„ femoralis	5½	6½
„ ischiadicus	8	9
„ saphenus	1½	1½
„ popliteus	6	7½
„ peroneus	4½	4½

From this table, it is apparent that, excepting the cerebral nerves of the second, fourth, eighth, eleventh, and twelfth pairs, and the cubital, saphenus, and peroneus, which have the same thickness in the Negro as in the Valaque; and, excepting the facial nerve, which was half a millimètre finer in the first, all the other nerves were from a quarter to half a millimètre larger in the Negro than in the Valaque. It consequently follows that, contrary to the testimony of Tiedemann, who, perhaps, was not entirely impartial, our observation agrees perfectly with the anatomical preparation of M. Jacquart in the Galerie Anthropologique of the Jardin des Plantes, in proving the justice of the observation of Soemmerring, that the *nerves of Negroes are larger than those of whites, relatively to the mass of the brain.**

The *larynx*, relatively larger than ordinary, was less prominent than in Europeans, and consequently resembled a feminine larynx.† Its cartilages were thicker and more voluminous than in us. The trachea was wide and flat from before backwards.

* *Op. cit.*, p. 58.

† I greatly regret not having been able to verify the very important fact observed and described by Sir Duncan Gibb, which came to my knowledge a year too late. "Essential Points of Difference between the Larynx of the Negro and that of the White Man", in the *Memoirs* read before the Anthropological Society, vol. ii, 1866.

The bronchial lymphatic glands very small. The thyroid gland, of ordinary volume, was trilobular; the lungs emphysematous, and very pigmentous—the left adherent, the right quite free.

The umbilicus, situated lower than ordinary, eighteen centimètres from the xiphoid process and thirteen from the pubis, formed a projection in the middle of a rather deep oval depression.

The subcutaneous cellular tissue of the walls of the abdomen was filled with fat of a yellow wax colour. The omentum, likewise, was composed of a smooth layer of fat two centimètres in thickness, and descended to the hypogastric region. The parietal and visceral portions of the peritoneum presented over all their extent a brilliant pearly colour, without offering the least spot of pigment anywhere, not even in the mesentery, where it is so frequent in whites.

The stomach and intestinal canal presented nothing remarkable. The mucous membrane of the entire canal was not pigmented. It was only upon the sides of the tongue, and upon the palate, as well as upon some places of the buccal membrane, that there were remarked striæ, of a deep violet colour, or blackish.

The liver, hypertrophied and fatty, the spleen, small and flaccid, and the kidneys, which were perfectly normal, did not present anything singular.

The left suprarenal capsule was completely atrophied, and reduced to a small mass of fat, the primitive glandular structure of which was only indicated by a semi-atrophied suprarenal artery, which penetrated into its interior. The right suprarenal capsule was very small, thirty-two millimètres long and eighteen broad; pale and flaccid.

The two ureters and the urinary bladder were considerably dilated.

Genital Organs.—The pendent scrotum was completely black. The circumcised penis was of an extraordinary volume. In a relaxed state it measured fourteen centimètres, or five and a half inches, in length, and three and a half to four and a half cent. in thickness. In imperfect erection, produced by the injection of melted suet, it attained a thickness of four to five and a half centimètres—*i.e.*, one and a half to two and a quarter inches—and a length of seventeen centimètres, or six inches and three-

quarters, measured from the upper edge of the pubis. The glans penis was broad, conical, and of a deeper colour than its neck (No. 43). Its edge was scattered all along with a row of hard and prominent glandules. The neck of the glans had a much lighter colour (No. 44-43); was richly provided with much developed smegmaceous glandules, especially near the frenulum.* The muscles of the penis were greatly developed; the bulb of the urethra very large (two and a half centimètres, without erection). The glands of Cowper and the prostate were of ordinary size, as well as the vesiculæ seminales, which contained a dirty fluid of a greenish grey colour.

The *nose* was fat, broad, and short, as usual in Negroes; the nostrils, wide and oval, were placed transversely in the plane parallel to the surface of the face. *Tongue* large and fleshy, with much developed *fungiform* papillæ. *Ears*, of medium size and but little prominency, longer than wide, with the inferior lobule only slightly detached. Muscles of the outer ear much developed.

Eyes.—Palpebral fissures narrow; eyelashes not long, but dense; conjunctiva of the globe of a dirty brown-yellow colour. Lachrymal caruncle small, but prominent. No trace of membrana nictitans. Lachrymal gland hard, and a little larger than common. The ocular bulb, also, a little larger (twenty-seven millimètres in longitudinal diameter, twenty-six millimètres in transverse diameter). The cornea (one centimètre in diameter) appeared to be rather small. Iris of a deep brown colour (No. 1), uniform, without radiated striæ. Pupil regularly round, neither dilated nor contracted. Upon the sclerotic there was a blackish streak, about one millimètre and a half in diameter, near and round the cornea. The choroid was carpeted with a very dense layer of pigment. The retina was thicker and less friable than ordinary.

The *hand* was rather small in proportion to the stature; the fingers a little longer relatively to the palm. The interdigital fold, as observed by Van der Hoeven, descended a little lower than in Europeans; that is to say, its termination corresponded to two-thirds of the length of the first phalanx. The thenar and hypothenar eminences were less developed, and, consequently, the palm of the hand was less hollow than in Europeans.

The *foot*, proportionally broad, was not flattened as it habi-

* This organ has been presented to the Société d'Anthropologie de Paris.

tually is in Negroes. The heel made no remarkable projection behind. The great toe was evidently shorter than its neighbour.

This investigation offers us many points of sufficient importance, in an anthropological point of view, to arrest attention upon their signification.

First of all, in resuming the principal anatomical data of our examination, we see that the greater part constitute the *tout ensemble* of the constant and invariable characters which are proper to the Negro race. Such are: the feminine form of the body, the black colouration of the integuments with its different shades in the different regions; the character of the hair; the abundance of the cellular tissue and the colour of the adipose tissue proper to Negroes; the smallness of the encephalic mass and the great relative thickness of the nerves; the low position of the umbilicus; the great volume of the liver; the greatly developed external genital organs; the form and colour of the eyes; the form of the ears and of the nose; lastly, the characteristic conformation of the hand, and the shortness of the great toe.

Finally, it imports us to dwell upon a subject still very unsettled in the anatomy of Negroes, that is, *the colour of cicatrices.*

Camper, Bichat, and Cruveilhier maintained that cicatrices are always white, whatsoever the colour of the skin may be. On the other hand, Cooper, Hunter, Virey, and others affirm, on the contrary, that cicatrices have the same colour as the skin, and even that they become deeper in colour. Uncertainty upon this point has not at present been removed, and diverse opinions *pro* and *con* upon the colouration of cicatrices have been many times uttered in the Société d'Anthropologie de Paris, especially on the occasion of the long and interesting debates on the action and influence of media, and on the causes of the different colour of the skin in different peoples.

As proofs of the non-colouration of cicatrices the following facts were cited. In Peru in the valleys of the Rio Huara, the Negroes are subject to a cutaneous disease called *Caracha*, which manifests itself in large pustules upon the thorax and the thoracic extremities. The indelible cicatrices which remain after these pustules are, it is said, white in Negroes and black in whites. The Society urged the need that this fact should be verified on the spot.*

* *Bull. de la Soc. d'Anth.*, 1861, t. ii, p. 133.

In the same Society, M. Broca, its General Secretary, demonstrated about three years ago a morsel of integuments of a Negress who died at the Hospital of Salpetrière. This skin, completely black, was scattered over with little spots much lighter, cicatrices following the small-pox. This fact does not appear to be a sufficient proof against the colouration of cicatrices in Negroes; for, firstly, we do not know what time had passed between the attack of small-pox and the death of the Negress; besides, the difference between the colour of the skin and these cicatrices could not be very great during life, if it had escaped the attention of the physicians who treated her in her last sickness.*

On the contrary, M. Simonot, who studied Negroes closely during his somewhat long residence in Senegal, expressly affirmed that in them all sorts of cicatrices became black after a certain time, and that this effect it produced more promptly if these cicatrices are more exposed to the action of the sun.†

M. Pruner-Bey not having pronounced anything decisive upon this matter in his eminent monograph *Sur les Négres*, nevertheless notifies that the colour of cicatrices in Negroes differs according to the colour of the skin itself, and according to the period of the cicatrisation. As to our particular case it appears to us to be an unequivocal proof supporting this opinion, which is certainly incontestable in a physiological point of view: *that cicatrices among Negroes become as deeply coloured as their skin, and this independently of the influence of media.*

In favour of this opinion we might also cite the small detail observed in our case, that the *corns* on the feet were much more deeply coloured than the skin of the toes. This circumstance, which has not yet been mentioned, as it appears to us, by anyone, tends to prove that the secretion of pigment in Negroes is as active and abundant in tissues newly formed as in the skin itself.

In what precisely concerns this immense production of pigment, which characterises the organism of Negroes, our case offers us upon this point two considerable deviations from what it generally observed in this race.

According to our manner of understanding it, in this immense quantity of pigment which is produced physiologically in Negroes

* *Bull. de la Société*, 2me série, t. ii, p. 509.

† *Id.*, 1862, t. iii, p. 144.

there may be distinguished two varieties: the yellow pigment (icterique) and the black (melanotique).

The first, the vehicle of which is the serum of the blood, gives the yellow colour to the conjunctive tissues and the fibrous tissues, as well as to the medullary substance of the brain. And it is the cause of the colour so particular of their adipose tissues, of their conjunctivæ, and of the fibrous membranes, for example, of the periosteum. It is this pigment with which the *sarcoléme* is impregnated, which gives that icteric colour to their muscles; and, lastly, it is from it that the dirty-yellow colour of the conjunctiva of the eyes is derived, where the black pigment must assuredly mix in a trifling quantity.

The black pigment which has its principal seat in *the solid parts of the blood,* is secreted and in the most considerable quantity under the epidermis, where it forms a continuous coat over all the surface of the dermis. Then we see it disposed in a thin and interrupted coat under the epithelium of the mucous and serous membranes. It is in consequence of this that the black colour of the skin is produced, as well as its different shades which depend upon the thickness of the layer of this pigment and of that of the epidermis. It is this pigment disposed in a fine scattered layer under the epithelium which occasions the deep cherry-colour of the labial, buccal, and lingual mucous membranes, and those brownish and black spots dispersed over the whole course of the intestinal mucous membrane, as well as over the surface of the peritoneum, of the pleuræ, and of the cerebral pia mater. It is to this abundance of black pigment in the blood, which circulates in the precapillary vessels of the brain, that is to be attributed the deep, nearly brown, colour of the cortical substance which is observed not only in Negroes, but also in dark individuals of other races. So much for the pigment in Negroes in general. It is in this, so to speak, that the physiological peculiarity of this race consists.

Our individual Negro, on the contrary, offered us an exceptional impoverishment of both the one and the other variety of his physiological pigment. The presence of the yellow pigment only manifested itself in him in the blood, in the adipose tissue, in the muscles and upon the conjunctiva of the eyes, whilst all the fibrous tissues both subcutaneous and deep were perfectly white and, at the same time, dry. Likewise the black pigment

was entirely expended upon the supply of the organ privileged in this respect—the skin; so that for the epithelial teguments there only remained a very slender quantity to tinge here and there the mucous membrane of the cavity of the mouth, the pulmonary pleura, and the conjunctiva of the eyes. All the other mucous and serous membranes were in him as clear and white as in the whitest of Europeans.

This exceptional insufficiency of pigment in our Negro is easily and sufficiently explicated by the equally exceptional conditions in the midst of which he found himself and was developed from his infancy. These conditions were—aliments assuredly much less carbonised than in his own country; and our moderate climate is less active and less prolific in the production of pigment in animals in general than under the tropical heaven of Africa.*

Is there any relation of dependence between the relative impoverishment of pigment in our individual and the almost complete atrophy of his supra-renal glands? It is certainly difficult for us to reply with any probability, since even the *rôle* of these rarely visited organs, notwithstanding the theory formerly announced on the occasion of the famous Addison's disease, still remains a mystery in physiology. And, on the other hand, the anatomical observations of anthropologists concerning these organs in Negroes are sufficiently contradictory. Thus, Pruner-Bey in Egypt and Brown-Séquard in America have often found these capsules of a considerable size in Negroes. On the other hand, there are observations contrary to these and analogous to ours, as, for example, that of Professor Broca, who found in a Negro of fifty years of age the supra-renal capsules much atrophied.

Before concluding, it seems to us important to dwell upon a point worthy of observation in this case; that is, the quite exceptional state, as it appears, of the brain noticed in our Negro.

Without speaking of the colour of the brain, which in no way differed from that generally observed among Europeans, the cause of which we should explain by means of the relative in-

* According to this view of the writer, the proverbially indelible blackness of the Ethiopian may be modified and blanched by food and climate. This is contrary to all anthropological data, and to universal experience in all parts of the globe.—Ed. *Journ. of Anth.*

sufficiency of the pigment, what is to be remarked first is the very small quantity of the encephalic mass found in our Negro.

What is the mean normal quantity of the cerebral mass in this race? In our opinion, science is still unable to reply to this question in a perfectly exact manner. For it is a fact truly strange in anthropology, that, notwithstanding all that is within its domain, and, still more, without it, which has been discussed and published upon the intellectual inferiority of Negroes, the measure and the weight of their brain is only known in a very small number of direct observations. According to our knowledge, there are only sixteen cases of such observations,* and, among this number, scarcely one half are sufficiently exact to be utilised as scientific facts of unquestionable value. To this latter category belong the observations made lately at London and Paris, which, having added ours, we represent in the following table, stating the weights in grammes.

		Encephalon.		Brain.	Cerebellum with pons Varolii and medulla oblongata.
Peacock.....	No. 1♂, aged 21.....	1233	.....	—	..... —
	No. 2♂, aged 23.....	1289	.....	1096	 198
	No. 3♂, aged 24.....	1246	.....	1090	 168
	No. 4♂, aged 40.....	1315	.....	1143	 168
	No. 5♂, aged 30? ...	1200	.....	1060	 140
Broca.....	♂?	925	Long preserved in spirit.		
Edm. Simon	♂, aged 50....	1226	With its membranes.		
Kopernicki..	♂, aged 35.....	1105	.....	955	 150

The comparison of these figures teaches us that our Negro possessed a quantity of brain which was a hundred grammes below the most degraded Negro of Central Africa in Dr. Peacock's series (No. 5). This degradation will become still more evident from the valuable results which the most recent anthropological researches made by the author of the *Crania Britannica*, Dr. Barnard Davis, afford. In his memoir upon the "Weight of the Brain in Different Races of Man," actually based upon indirect data, yet tolerably precise and accurate, by means of the calcu-

* These cases are the following: *a.*, two of Mascagni, cited by Pruner Bey; one of them weighed 738, the other 1587 grammes! *b.*, one of Astley Cooper, weighed 49 ounces, cited by Peacock. *c.*, two of Soemmerring (*op. cit.*, p. 57). *d.*, one of Tiedemann, long preserved at Liege (J. Barnard Davis), weighed 2 lbs. 3 oz. 2 dr. (Peacock). *e.*, seven of Peacock, five of which were male and two female. *f.*, three of Broca, Edm. Simon, and ours at Bucharest.

lation of the internal capacity of different skulls, Dr. J. B. Davis has arrived at important results, which are expressed in the following table, the weights being stated in grammes—

Races.	Males. No. of Skulls.	Males. Average.	Females. No. of Skllus.	Females. Average.	Differences.	Total of male and female.	Means
European..	299	1367	94	1204	163	393	1296
Asiatic.....	124	1304	86	1194	110	210	1245
African ...	53	1293	60	1211	82	113	1237
American..	52	1308	31	1187	121	83	1273
Australian.	24	1214	11	1111	103	35	1162
Oceanic ...	210	1319	95	1219	100	305	1272
Totals ...	762	1301	377	1188	113	1139	1246

As to what concerns Negroes in particular, we find in this *Memoir* of Dr. Davis that there are only two in his series, those from Congo, the most degraded, the entire encephalic mass of which would weigh in the mean one thousand one hundred and twenty-seven grammes. It is therefore scarcely to these that our Negro approached, on account of the small quantity of his brain.

Notwithstanding all this exiguity as to its mass, the conformation of the brain in our Negro did not present any of those characters which one generally considered as signs of inferiority. Over all the surface his brain, as we have already said, was covered with folds, although less profound, but as abundant, and even more abundant, than in the brain of a Wallachian woman.

In a word, it seems to us that the phrenologist of the present day, judging from his point of view, which is quite modest, and, in fact, moderate, but strictly physiological, might pronounce, not without foundation, that Nature had wronged our Negro in giving him a too limited quantity of cerebral mass; but that his cerebral organs, in consequence of his ulterior education, have acquired a certain degree of maturity and perfection, to which he could not have attained in the midst of his own people.

Table I.—*Measurements of the Body of the Negro, Ali Mardjan.*

	Metre.
Stature (63·2 inches English, or 5 feet 3·2 inches)	1,610
Head—Longitudinal diameter, maximum	190
"inial" (Broca)	188
Transverse, biparietal	145
bitemporal	123
biauricular	135
inferior frontal, minimum	110

	Metre.
Fronto-occipital arch, total	380
Transverse arch	335
Horizontal circumference	550
Interzygomatic diameter	116
Distance from the extremity of the middle finger to the soil	620
from the umbilicus to ditto	950
from the upper edge of pubis to ditto	820
from the raphe of perineum to ditto	760
Length of the thumb	70
the middle finger	105
Circumference of the thorax under axillæ	790
at the waist	830
Length of the foot	250

TABLE II.—*Measurements of the Skeleton of Ali Mardjan, compared with Analogous Measurements of the Twenty-one Skeletons of Negroes made by M. Pruner-Bey.*

	Ali Mardjan.		21 Negroes.
Cranium—Longitudinal diameter	181	...	186
Height	132	...	124
Transverse diameters:			
Inferior frontal	103	...	100
Superior „	120	...	113
Bitemporal	117	...	125
Biauricular	113	...	112
Biparietal	134	...	134
Bimastoidal	117	...	117
Horizontal circumference	510	...	511
Transverse arch	310	...	305
Longitudinal arch	360	...	355
Frontal portion	125	...	105
Parietal portion	120	...	136
Occipital portion	115	...	114
Face: Total length	147	...	123
Length of the bones of the limbs:			
Femur	427	...	447
Tibia	369	...	380
Humerus	310	...	312
Radius	251	...	246

ART. II.—THE PHYSICAL CHARACTERS OF THE AUSTRALIAN ABORIGINES.

BY C. STANILAND WAKE, Dir.A.S.L.*

I HAVE no intention in this paper of minutely considering the several points of interest presented by the physical structure of the Australian aborigines. Its object is rather, by a comparison of the data furnished by writers whose testimony is founded on personal observation, to ascertain what are the general characters of this structure, and to determine whether or not the widespread aboriginal tribes form a single race. It is not necessary for me to give any detailed account of the discovery and explorations of this peculiar country, a task which has already been efficiently performed by Mr. Major and Mr. William Howitt, and less fully by M. Dumont d'Urville. I may say, however, that Bernard della Torre was apparently the first European who is actually known to have touched the coast of Australia. This was in 1542, although the honour is usually ascribed to the owner of the Dutch ship *Le Duyfhen*, which reached the northern coast in 1606, the discovery by Luis Vaes de Torrés taking place in the same year. During the three hundred years or so that have elapsed since the voyage of Della Torre, the whole of the Australian coast has been traced, and much of the interior, especially towards the east, has been explored; although, owing to the vast extent of the country and its peculiar character, the greater part of it may be expected to long remain a sealed book to Europeans. It may, perhaps, be thought that under the circumstances, we can hardly hope to decide yet whether all the Australian tribes belong to but one race. There is some truth in this objection; but when we consider that the valuable work of Mr. Eyre has given us pretty full details as to the aborigines of Southern Australia; that Sir George Grey and Mr. Oldfield have done the same for great part of the western side of the continent; that Mr. Earle has supplied us with certain facts as to the natives of the northern coast; and that Collins and Lang have given us much information as to the aborigines of New South

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Wales and Queensland in the east; we may safely attempt to draw some general anthropological conclusions, subject only to revision, if rendered necessary by subsequent discoveries. This is the more allowable, as, thanks to the information supplied by the daring adventurers who have penetrated into the interior of the continent, and who, like Stuart and Leichardt, have actually traversed it from coast to coast, we are not without means of comparison, although these are not so perfect as we could wish, of the coast natives with those of the interior.

The first question for consideration is, whether the Australian aborigines, judging from the testimony of travellers, may be referred to but one and the same race? This question must, undoubtedly, be answered in the affirmative. Thus, Flinders remarks that the natives of a small island, visited by him, in the Gulf of Carpentaria, did not differ much in feature from their countrymen on the southern and eastern coasts. Captain King says that a native, who was captured off Lewis Island, was "a perfect *fac-simile* of the inhabitants of the eastern coast." So Commander Stokes asserts that a man of Arnhemland, in the north, had the overhanging brow which is so remarkable a peculiarity of the Australian aborigines. This feature, with others equally characteristic, such as the large flat nose, full lips, and wide mouth, is presented by all the natives of the west coast between Roebuck Bay and Port George IV, a distance of about 200 miles. If we turn to the south-west coast we find that, according to Captain King, the natives there are, "in most respects, very similar to their neighbours," a remark in which he perfectly agrees with the French traveller, Péron. Flinders still further extended this comparison, and said that he was surprised to find so great a resemblance between the aborigines at King George's Sound and those of the east-coast of New South Wales—their colour, the texture of the hair, and their personal appearance being the same. This traveller compared, moreover, the natives of Port Lincoln with those at Port Phillip on the south coast, and he says that "they differ in no essential particular from the other inhabitants of the south and east coasts." The same opinion was evidently entertained by M. Dumont d'Urville, who visited King George's Sound and Jervis Bay; while Captain Cook appears to have found no difference in the natives throughout the whole eastern coast, a distance of upwards of two thousand miles. The

description given by Collins of the natives of Port Jackson, in New South Wales, would almost do for those seen by Stokes at Roebuck Bay, in the north-west. Again, Captain King remarks that "the tall, slender form of the Port Jackson natives, and their other peculiarities of long curly hair, large heads, and spare limbs, are equally developed," in the inhabitants of the country near the Bowen River, in Queensland. If we come round again to the extreme north, we find Mr. Earle stating that certain features were possessed in common by all the tribes with which he was acquainted in the neighbourhood of Port Essington, while these northern Australians possessed many of the general characteristics of the tribes of the south. Major Campbell says positively that the inhabitants of Melville and Bathurst Islands, not far from Port Essington, are of the same race as the aborigines throughout Australia, although, he adds, they are more athletic, active, and enterprising, than the natives he saw on the southern coast, at Port Jackson, Newcastle, or Hunter's River. I may remark that, on my showing the figures of the North Australians, given in Mr. Earle's volume, to a gentleman who had lived many years in Western Australia, he at once recognised their resemblance to the natives of the latter part of the continent. The characters presented by the aborigines of the interior have the same general feature. Mr. Barron Field asserts that the natives of Bathurst, west of the Blue Mountains, resembled those of the east coast in appearance. Captain Sturt met with a remarkably fine tribe at Cooper's Creek, in the north-eastern part of South Australia, "without the unseemly protrusion of stomach so common among the generality of natives." There is nothing to show, however, that they were not in general appearance the same as the other aboriginal Australians, and as to their women, indeed, Sturt says that they were "the same half-starved, unhappy-looking creatures," whose condition he had so often pitied elsewhere. Of the neighbouring tribes, moreover, Sturt declares, that they resemble in their peculiarities, not only those of the Darling and the Murray, but also the aborigines of the whole continent. If we pass further north, we find M'Kinlay saying that the natives of the Leichardt River, towards Port Denison, were of the ordinary stamp; and, although certain minor differences were observable among the tribes met with by Leichardt in his journey from Morton Bay to Port Essington, yet all seem to have been much the same in appearance. This may,

with one exception, be said, also, of all natives met with by Mr. Stuart in his explorations of Central Australia, and his journey across the continent. This exception is furnished by the presence, about 3 deg. north of the central point of the continent, of a tribe of whom Stuart says "they have quite a different cast of features from those in the south; they have neither the broad, flat noses and large mouth, nor the projecting eyebrows, but have more of the Malay" (p. 220). It is strange that a tribe so different from all others, as these appear to be, should be thus isolated—as the natives, seen as well farther north as more to the south, were evidently of the ordinary type—and their special Malay affinity must be accepted with reserve until they have been more fully described. It is true that individuals have occasionally been met with by other travellers, who, in their light colour and other peculiarities, have been thought to show the presence of Malay blood. These cases have been rare, however, and there is no real reason why they should be ascribed to a foreign source.

Mr. Eyre, who is one of the best authorities on questions relating to the Australian aborigines, asserts that all the natives with whom Europeans have come into contact are strikingly similar, and I cannot do better than give the description of their appearance furnished by him. He says that the *male* is "well-built and muscular, averaging from five to six feet in height, with proportionate upper and lower extremities. The anterior lobes of the brain are fairly developed, so as to give a facial angle, far from being one of the most acute to be found amongst the black races. The eyes are sunk, the nose is flattened, and the mouth wide. The lips are rather thick, and the teeth, generally, very perfect and beautiful, though the dental arrangement is sometimes singular, as no difference exists in many between the incisor and canine teeth. The neck is short, and sometimes thick, and the heel resembles that of Europeans. The ankles and wrists are frequently small, as are also the hands and feet. The latter are well formed and expanded, but the calves of the legs are generally deficient. Some of the natives in the upper districts of the Murray, are, however, well formed in this respect. In a few instances natives attain to a considerable corpulence. The men have fine broad and deep chests, indicating great bodily strength, and are remarkably erect and upright in their carriage, with much

natural grace and dignity of demeanour. The eye is generally large, black, and expressive, with the eyelashes long. (Vol. i., p. 206.) Of the *female*, Mr. Eyre says, "the average height is about five feet, or perhaps a little under. The anterior part of the brain is more limited than in the male; the apex of the head is carried further back; the facial angle is more acute; and the extremities are more attenuated. Occasionally, though rarely, I have met with females in the bloom of youth, whose well-proportioned limbs and symmetry of figure might have formed a model for the sculptor's chisel. In personal appearance the females are, except in early youth, very far inferior to the men. When young, however, they are not uninteresting. The jet black eyes, shaded by their long dark lashes, and the delicate and severely formed features of incipient womanhood, give a soft and pleasing expression to the countenance, that might often be called good-looking—occasionally even pretty. The colour of the skin, both in the male and female, is generally black, or very darkly tinged. The hair is either straight or curly, but never approaching to the woolliness of the negro" (p. 208). Mr. Eyre adds, as to the hair, that "when washed and purified, it is very abundant and beautiful in appearance, it being a silken, glossy, and curly black." Before considering certain particular characters, this description may be supplemented by that furnished us by Count Strzelecki, although this latter relates more especially to the natives of New South Wales. After referring to their stature (which he makes lower than the average given by Mr. Eyre—from four and a half to five and a half feet), trunk and limbs, and stating that, in some instances, the whole body is covered with hair, Strzelecki goes on to say that, the face "presents a facial angle of between 75 deg. and 85 deg. It is marked by a low forehead, eyes large, far apart, and half covered by the upper lid, with a conjunctiva of the purest white spotted with yellow; the iris invariably a dark brown, the pupil large and of a jet black; a nose broad and flat, the frontal sinuses being remarkably prominent, the nostrils extending and wide-spread; the cheeks generally hollow, with prominent malar bones; a wide mouth, with large white teeth, and thick lips; the lower jaw unusually short and widely expanded anteriorily." (p. 334.) He adds that, "the stature of the women is low, the head short, and the features masculine; the mammæ,

instead of being hemispherical, are, in marriageable persons, pyriform, and soon after marriage become flaccid and elongated. The arms are slender; the hands small; the pelvis unusually narrow; the lower extremities slight, straight, and lean; the foot large, flat, and invariably turned inwards." (p. 335.)

This description, while agreeing on the whole with that given by Mr. Eyre, adds certain characters to those mentioned by him. The most striking of these is the shortness of the lower jaw, which is referred to also by Sherzer, in his narrative of the voyage of the *Novara* frigate (vol. iii, p. 61), and which is probably intended by the contraction of the lower part of the face, mentioned by Major Campbell. (See *infra.*) The above descriptions of the physical appearance of the Australian natives is not applicable in each particular to every tribe. I have already referred to the Hayward Creek tribe, of the interior, who are said, by Stuart, not to have the broad flat nose, and large mouth, usually seen among the natives, nor yet their projecting eyebrows. Again, the natives of the north and west coasts, and those also of the central part of the continent, are usually described as being tall—often more than six feet high—while those on the south and easts coasts are said to be of middle height, although generally robust and muscular. According to Commander Stokes, however, the aborigines of the north-west coast are not more than from five feet five inches to five feet nine inches in height, and it is possible that the same mistake, in relation to height, has been made by Australian travellers as was committed by the early navigators, who declared that the Patagonians were seven feet high. Mr. Stuart, indeed, says that a man seen near the Chambers River, in the interior, was seven feet high; while, near the source of the Adelaide River, still further north, he met with natives who were "the smallest and most miserable race of men" he had ever seen, they being only about five feet in height. Sturt made a similar remark of men he saw near Flood's Creek, west of Lake Blanche. The aborigines at the spot, in the north-east, where Cook's ship went ashore, were also of small build, and about five feet high. It would seem that peculiar circumstances occasionally favour this increase or decrease in height, but most probably what Major Campbell remarked as to the natives of Melville Island is true, as a rule, of all the aboriginal tribes of the continent. He says—"They are not generally tall in stature, nor are they, when numbers are

seen together, remarkable for small men. In groups of thirty, I have seen five or six strong powerful men of six feet in height, and some as low as five feet four inches and five. There are certain peculiarities about the Melville Islanders, who are yet declared, by Major Campbell, to resemble the Australian natives in general appearance, and it may be well to quote the description of the former given by this writer. He says that they "are well formed about the body and thighs; but their legs are small in proportion, and their feet very large; their heads are flat and broad, with low foreheads and the back of the head projects very much; their hair is strong, like horsehair, thick, curly, or frizzled, and jet black; their eyebrows and cheek-bones are extremely prominent, —eyes small, sunk, very bright and keen; nose flat and short, the upper lip thick and projecting; mouth remarkably large, with regular, fine, white teeth; chin small, and face much contracted at bottom. . . . . The colour of their skin is rusty black."* In these natives we have the prominent forehead or brows, and the contraction of the lower jaw, with the broad and flattened nose and wide mouth, which are possessed by the aborigines of the continental area. The disproportion between the trunk and the lower limbs and the large size of the feet do not agree with the description of the South Australians given by Mr. Eyre, although the former peculiarity is undoubtedly found among some natives of the continent,† and the latter is mentioned by Strzelecki.

The most curious fact to be noted in the description of the Melville Islanders is the character of their hair, which is said to be "strong, like horsehair, thick, curly, or frizzled." In confirmation of the statement that these natives have frizzled hair, I may cite Mr. Earle, who says expressly that hair of this description "is very common among several of the aboriginal Australian tribes, more especially those of the north and north-east coasts," although he adds that this is different from the woolly hair of the negro. (P. 189.) Commander Stokes moreover asserts that the natives at Port Essington have crisp hair, and he says the same of the Clarence Strait natives. Dampier makes this remark also as to the inhabitants of the mainland off Dampier's Archipelago,

* Earle's *Papuans*, p. 199.

† Captain Sturt refers to this peculiarity, in his description of the desert tribes near Cooper's Creek, whom, in general appearance, he describes as agreeing with "the aborigines of the whole continent". (Vol. ii, p. 135.)

and Freycinet confirms the observation. More strangely, however, Sir Thomas Mitchell met with the same kind of hair, apparently, in East Australia, on the Bogan River. He says, as to a tribe here, it presented a greater variety of feature and complexion than he had ever seen in aboriginal natives before; "most of them had straight brown hair, but others had Asiatic features much resembling Hindoos, with a sort of woolly hair."* Perhaps to the same category belong the women with black skins and long glossy ringlets, met with by some travellers in the interior. Sturt saw a woman of this description north-west from Lake Torrens, and he says that her companions, who appeared to be of a different race, evidently had no liking for her. This forms a great contrast to the men seen by Stuart near the Hanson, in the centre of the continent, whose heads either had no hair at all or it was quite short, as though it had been burnt off close to the skin. This may, however, not have been a natural condition. In relation to the question of hair-form it may be worth referring to the fact mentioned by Stuart, that in the hot, dry climate of the interior the human hair and the wool of the sheep alike cease to grow, a fact from which, perhaps, an explanation may be derived of the frizzled hair of the north-western natives, which is only an intermediate stage to the so-called woolly or wiry hair of the Papuan and Tasmanian. I will leave this part of the subject by remarking that, on the Darling River, Sir Thomas Mitchell met with a native whose features were decidedly Jewish, and who had a thin aquiline nose and a very piercing eye. Probably this was a refinement of the Papuan type, which is often said to be somewhat Semitic. It is noticeable that, according to some writers, the aquiline is the natural form of the native Australian nose. This is affirmed by Wilkes, who says that the depression of the nose at the upper part, and its width below, are due to the action of the mother during the child's infancy, and, therefore, that they are artificial deformities.

I have said little about the form of the Australian skull for several reasons. It is deserving of separate treatment; if, indeed, the data for its determination are yet sufficient

* *Three Expeditions*, etc., vol. i, p. 213. It is not impossible, although hardly probable, that these were continental importations, as individuals answering this description would seem to be not uncommon among the aboriginal tribes of Western India. (See Pickering, *Races of Man* (Bohn), p. 135.)

to enable a satisfactory conclusion to be arrived at as to the general skull form of the aborigines. Two facts, however, seem to be pretty well determined; these are, that the Australian skull, like that of the dark races generally, is *dolichocephalic*, and that the forehead, owing in great measure to the prominence of the frontal sinuses, is often well developed. This, with the smaller protrusion of the jaws, generally results in a profile much less animal than that usually associated with the West African native. I may add, that the average measurement of fifteen Australian skulls, described by Dr. J. Barnard Davis, in his *Thesaurus Craniorum*, gives an interval capacity of 65·1 ounces (avoirdupois), the smallest of the skulls having a capacity of only 59·, while the largest was as high as 86·. It should be stated that the skull of the native Australian female is very inferior in form to that of the male, approaching much more nearly to the animal type. Whether or not but one form of skull is found through the whole of the continent can hardly yet be determined. My friend, Dr. C. Carter Blake, assured me that the skull of the Moreton Bay natives are of a peculiar type, having the crown more depressed, while the frontal sinuses are not so prominent as in the ordinary Australian skull; and Professor Busk appears to be of the same opinion. Whether this difference is general may perhaps be doubted,* but it can hardly disturb the conclusion already stated, that the Australian skull is *dolichocephalic*.

In conclusion—the most striking peculiarities presented by the physical characters of the Australian aborigines are, first, the great prominence of the brow; secondly, the contraction of the lower jaw; thirdly, the wide expansion of the nostrils, combined with great depression of the nose at the base; fourthly, the extreme width of the mouth; fifthly, the absence, sometimes observable, of any difference in form between the incisor and canine teeth; sixthly, the straightness and silkiness of the hair, with certain exceptions; seventhly, the hairiness, in some cases, of the entire body. This last character is expressly mentioned by the Austrian naturalist, Sherzer, and is referred to by Wilkes (see vol. ii, p. 185) and other writers.

* May it not result from artificial deformation? Dr. J. Barnard Davis says that the influence of artificial interference "must be very considerable, and it must be an element of far more weight and importance than craniologists have hitherto esteemed it to be" (*op. cit.*, p. 315).

ART. III.—ON THE DIFFERENCE IN THE CRANIAL STRUCTURE OF THE GORILLA, CHIMPANZEE, AND ORANG-OUTANG,

WITH SPECIAL REFERENCE TO SEX AND AGE, AND WITH SOME REMARKS ON THE DARWINIAN THEORY.*

BY TH. L. W. BISCHOFF. Munich, 1864. (Reviewed by L. RÜTIMEYER.)

SINCE the famous "finding out" of the cranial vertebræ by Oken and Goethe, which caused such a feud between these, as well as between Cuvier and Geoffroy St. Hilaire, and divided naturalists into two hostile camps, until the history of development acted as a mediator, there has not been an event which caused so much excitement, especially in England, and gave rise to such personal discussions even among the general reading public, as the re-discovery of the gorilla; and for very obvious reasons. On both occasions the subject involved the relations between matter and mind, between the perishable and imperishable. But whilst the French Academy silenced for a time the old contest raised by Duméril almost simultaneously with Oken by the nickname *Vertèbre pensante,* the jeers and scoffs of the opposed parties in the present contention still continue. On neither occasion was the contest carried on for the benefit of science. And less so in the latter, because the scientific examination of the gorilla coincided with pregnant events which rendered it doubly important, namely, with the appearance of a work *On the Origin of Species,* and with the resumption of the study of anthropological anatomy. We have little doubt but future historians will envy us, who have lived in a period during which so many rays of light fell upon a spot which will ever remain for man a central point for his most difficult questions. The general public, with their instinctive tact, felt this, and the future historian will find the evidence of it in the present non-scientific literature. But, how will they judge US, who find our-

* Bischoff, Th. L. W. *Ueber die Verschiedenheit in der Schädel bildung des Gorilla, Chimpansé, und Orang-Outang, vorzüglich nach Geschlecht und Alter, nebst einer Bemerkung über die Darwin'sche Theorie.* München, 1867. Rec. von Rütimeyer. Translated from the third and concluding part of *Archiv für Anthropologie,* 1868.

selves in the presence of such an unexpected light, conscious as we are, that the greater portion of the public places the sword of justice into our hands, confidently expecting the verdict of natural science? The mode in which this contest is carried on in England will certainly not furnish a testimonial in our favour. So much the more should it be the mission of serious journals, such as the anthropological archives claim to be, to stand up for an impartial but dispassionate, for a candid but a severe critique of the treatment of such serious problems.

So long an introduction to so short an article on the above work may seem superfluous, the more so as the reviewer is not in a condition to compare it with desirable completeness as regards method and results, with earlier partly inaccessible works; and he labours under another difficulty, as he possesses but scanty materials practically to verify the criticised work. The preceding remarks may, nevertheless, here and there calm down unseemly passions, and not only excuse but strengthen many a hard word here said, touching the work of so eminent an inquirer in many well-known fields of science.

The above work is distinguished above all others which treated of anthropoid apes by the abundance and completeness of its materials. Fifty-five crania of male and female, old and young specimens of the gorilla, the chimpanzee, and orang-outang (gorilla, old males, 2; old females 3; young, 3. Chimpanzee, old males, 2; old females, 7; young, 4. Orang, old males, 7; old females, 12; young skulls, 15). Materials so rich, as regards the most important animals, have never been at the disposal of one and the same naturalist. But such wealth imposes obligations—first, to start from the performances of predecessors, and, secondly, to achieve more than they have done. We must leave it to the judgment of those better acquainted with the earlier literature, and with modern labours in this field, how far the above expectation has been realised. For our own part we have the following strictures to offer: although a number of earlier works, such as those of Vrolik, Wyman, Owen, Duvernoy, are mentioned in the introduction, and here and there in the work, we find nowhere that they have been used as a basis, although they might have been of great service as supporting the new investigation. The book of Lucae is also occasionally mentioned; but in a work which manifestly claims to exhaust the subject for a considerable time

to come, we must express our surprise that so many treatises, such as those of Van der Hoeven, Dumortier, Heusinger, Werner, Harlan, Wormb, as well as the older writings of A. Wagner and Cuvier, although they only partially treat of the new subject, have been perfectly ignored.

As regards the new achievements of Bischoff we may, perhaps, excuse that one part of the investigation, namely, the examination of the interior of the skull, with all its consequences in relation to the form, volume, and growth of the cranium, has been completely set aside; nor is any mention whatever made of the literature on this subject from the time of Tiedemann to that of Gratiolet. No doubt, entrusted crania cannot well be sawn through; but Herr Bischoff would have been entitled to our thanks if he had resolved to show us not merely the shell but also the kernel of the Munich skulls, by which their value would have been doubled. Comparisons with the cranial and cerebral structure of man have thereby been rendered impossible, so that it seems as if this part of the inquiry, which was to be the final result, had been purposely withheld. Even if we consider it as a purely zoological work, and take the postscript to be an appendix, added for the occasion, the zoologist must still say, that so rare a collection of almost inaccessible materials as that at Munich, has yielded much fewer results than we had a right to expect.

We are all aware that at present new objects should not be described without annexed drawings, and that, as a rule, the latter are of more service to the student than the text, which is always but a poor compensation for ocular inspection. Even in the work of Bischoff, which captivates us at once by the richness of the atlas compared with the poverty of the text; we, as well as the author, consider the atlas as the main part. We do not here advert to the arrangement of the plates, which has been justly but too angrily censured by a reviewer in *Zarnke's Centralblatt*, No. 19. Although in library copies, which must be bound, the triple repetition of the family renders the comparison of the plates sufficiently difficult, it is nothing compared to that caused by a similar arrangement of the text. Moreover, every private possessor of the atlas may, for comparison, leave the plates unbound. One, or better, three collective leaves, with accurate geometrically drawn mere outlines, or in Camper's vigorous manner, reduced sketches of the different cranial views, would, at the very least, have doubled the usefulness of the atlas.

There are, however, graver objections. Notwithstanding that the atlas abounds with instruction, for which we ought to feel grateful, yet the information seems to be given unconsciously rather than intentionally. Although some praise is due both to the lithographer and the photographer, yet no one acquainted with osseous surfaces can deny that, as regards individual accuracy and character, the portraits given are far inferior to those by Erxleben in Owen's works. How dull and vapid the insertions of the muscles, how dead, especially the lower jaw. All these drawings seem rather copies from bad gypsum models than drawn from nature. We must not, however, forget that the designer acts generally according to his instructions, and that his employer declared himself satisfied. But there is a strong presumption that the designer had pretty nearly *carte blanche*, not merely as regards the execution of the drawings but also as to the position of the skulls. And herein lies, in our opinion, the gravamen for the adjudgment of the whole work. After the prolix contentions which were carried on before and after the discussion at Göttingen, on the position of skulls in drawings; in the face of a literature which treats of this subject since old Camper, and of the weighty preliminary considerations urged by Nathusius, in his excellent work on animal skulls, we must express the utmost surprise that the reader learns absolutely nothing touching the perspective and geometrical principles, so that it seems as if none were followed. It is probably by accident that the views of the cranial basis are better executed, although we may ask ourselves what influence this or that inclination of the skull might have exercised upon the form of the aperture of the choanæ, the outlines of the mastoid region, and the length of the palate. The profile position, the most easily arranged, is handled with singular carelessness, of which fig. 4, 5, and 28, are instructive examples, not merely as regards the nasal aperture, but also with reference to the more or less of what is shown of the occiput. All these points, which in views "in natural size," and where the student is referred to his own measurements, are of great importance, especially as the text is very sparing of indications. And, above all, the portraits of the facial side! Owen, also, gives no explanation as regards the principles followed in his portraits; but every one sees at once that the palatal, or masticating surface of the teeth was placed horizontally. In Bischoff's portraits it is purely impossible to

set one's self right; for we obtain the impression that no skull is exactly placed like another (compare, for example, fig. 2 and 11, chimpanzee, male and female, whose cranial axis differs considerably in inclination). And the circumstance that the lower jaw offers no rational stand cannot serve as an excuse, for it is generally objectionable to represent skulls with annexed lower jaws. The consequence is that we nowhere, in such inaccessible objects, obtain a side view of the pterygoid portion, and, what almost sounds incredible, there is not a single representation of the mandibular teeth, just as the views of the maxillary teeth from the masticating surface are, in consequence of the steep cranial position, perspectively quite distorted, so that the dentition as a whole, despite all the costliness of the representation, is, with exception perhaps of the canine teeth, lost to the observer. The disregard of previous labours, and of the progress of science in general, shown in the arrangement of the delineations, is rendered still more evident in the measurement tables of the text. We are left in ignorance, not merely in reference to the individual skulls which have been portrayed or measured, but we become, on the contrary, convinced by re-measurement, that very frequently other skulls than those measured are delineated. And not merely are the measurements of about forty skulls withheld, and averages slighted, but we only receive for the male and female of each species eight measurements, equally divided between the pregnant and significant skull with four measurements, and the comparatively sterile and insignificant lower jaw, also with four measurements. We fully admit that the cranial measurements are very usefully selected, and will retain their value. But were succeeding inquirers not entitled to expect a little more from such a curious collection? And has the whole literature of cranial measurements since Blumenbach, as regards man, and since Camper and Cuvier, as regards animals, not enabled Herr Bischoff to obtain greater results from so rare an opportunity? Where, if not here, was the proper place for discussing the principles of cranial measurements in general, than on a subject which in youth is anthropoid, but acquires, with advancing age, excessive muscular cristæ and pneumatic tumefactions of the bones, of which there scarcely exists another instance. Sobriety in the representation and concentration of the results of observation are, no doubt, very praiseworthy qualities in descriptive natural

science; but surely we do not judge unfairly in lamenting that Bischoff almost entirely kept for himself the gain of his, no doubt, careful researches, and dismisses his readers with the crumbs from his abundantly supplied table. As regards measurements, even old Daubenton, though much groping in the dark with his compasses, has yet rendered more service to his successors than Herr Bischoff, with materials to the proper utilisation of which the scientific world looked forward with such intense interest. With, say but one table, and only four measurements of the skull, even putting aside the lower jaw, carried out in *all fifty-five* crania, which were at his disposal, science would have profited more than with the numerous groups which he scattered in the book. To work upon it, which must be the primary requisition of scientific publications, is here rendered all but impossible.

We may rapidly dispatch the rest of the text. The fatigue which seizes the reader on perusing the repetition of twelve chapters, is much greater than the inspection of the tables. Still, the text contains many important points; but it requires discrimination to search for and to collect them. How much might we not have learned if Herr Bischoff had resolved first to teach us from his rich materials, the laws of development and growth of the ape-skull in the same way as Nathusius has done for swine, and if we had learned how the cerebral capsule *per se*, and how the facial skull become developed with advancing years: how further the relations between these two parts of the skull, which manifestly do not proceed *pari passu*, are established in time, and finally what influence the growth of the muscles and the dentition, and the development of the cavities for the senses, exercise upon these relations. It would have been much easier, with a less disseverance of the task, to form a definitive opinion on the three species; this, in point of fact, is withheld from the reader, or can only be picked out by him with great labour, and is the more to be regretted, as some of the results obtained are of great importance. I do not think that hitherto the great difference which demarcates the Asiatic from the two African species, has been rendered so evident as in Bischoff's work. It is perfectly demonstrated that the orang from his youth to advanced age represents a strictly brachycephalic, whilst the two African species represent a decided dolichocephalic simious type.*

* Professor Deslongschamps, of Caen, when investigating the crania of

Although the orang finally rivals the gorilla as regards the development of the muscular cristæ, still, in consequence of the more brutal development of his front teeth, his small round eyes retained within the cerebral capsule, his small nasal bones in the adult state, he appears a much more brutal animal, and more removed from man than the two Africans, of whom the chimpanzee unquestionably occupies the higher place, because he preserves during his whole life more of his youthful form, and also excels the gorilla in the development of his fore-and-hind brain. His nasal cavity is also more spacious, despite the small narrow aperture of the choanæ, which seems to be characteristic in the chimpanzee. How very instructive, generally, is the impression produced by the study of the plates, namely, that all these apes, and, singular enough, more so the Asiatic, who finally lags so far behind, take at the outset a mighty start towards a higher development, which is, however, arrested by material cares for the acquisition of their daily bread, and especially with the awakening of the sexual instinct for the propagation of the species. It seems as if the bitter struggle for existence both as regards the individual and the species with reference to food and propagation, had blighted the hopes of early promises; and we are tempted to ask what might not have become of the heads in Plate XX, and especially of Plate XXII, if the struggle had not been merely for existence, but for progressive development. Has not every anatomist who is acquainted with human crania, or have not all of us frequently seen members of our own species who (and assuredly in many cases owing to the bitter struggle for existence) have started from a higher scale than the orang, and yet at the end of life arrived just where the orang (Table XXII) commenced? How clearly do these plates prove that this struggle for existence, no doubt improves the animal qualities of organic life, strengthens the muscles, develops the senses; but when it is too severe it does so at the expense of the brain, and that this struggle could scarcely be perpetuated if there did not exist an inexhaustible source of unknown origin, which provides youth again and again with the means of recommencing the race, and finally to excel the parents. Must not

gorillas and orangs, of early youth, affords evidence which, however, bears strongly against this theory, and shows that, in the young gorilla and the young orang, the proportions are precisely equal.—ED. *Journ. of Anth.*

every one who compares fig. 27 with fig. 3, or fig. 28 with fig. 6, mournfully exclaim, "What has become of thee?" And may he not sorrowfully remember what he himself possessed of genuine creative poetical fancy in childhood when the struggle for existence was yet unknown to him. There must, therefore—and here is the place to express it—there must, to this struggle for existence, the effect of which no one doubts, be something added, something which obtains the victory over it—a forward impulse, a hidden spring, which impels all creation *per aspera ad astra.*

As regards the two African species between themselves, it appears to me that some lessons may be learned from Bischoff's plates, which were well worthy of being touched upon in the text. They present us—and would that there had been more of them, especially of the intermediate ages between young and old—with a kind of biography of the two species. The starting-point for both (Tab. XIX-XXI) is surprisingly similar; although some trifling differences, such as the lesser expansion of the olfactory canal, *i.e.*, less extension of the nasal bones, and smaller circumference of the choanæ, are already perceptible in the chimpanzee. The fore-brain is perhaps more developed, and the visual organ is already at an early period planned larger, whilst the hind-brain seems to predominate in the gorilla, in which also the dental apparatus is laid down on a stronger plan; hence the facial part of the skull is large, the roots of the teeth and the alveoli large, the jaws high. It is already seen that he has a harder struggle before him than the chimpanzee. And certainly how different is the end (Tab. I, II, XXI). And yet the great affinity between them is still unmistakable. Even then the forebrain predominates in the chimpanzee, the hind-brain in the orang (See fig. 4, 5, 13, and 16), and the former preserves a more open eye (Fig. 2, 1, 11, and 10). It seems that a different alimentation was assigned to these two species. Thus we see that in the gorilla the molar mastication predominates, as shown in fig. 9 and 16, which is rendered still more manifest by the enormous development of the crests for the temporal and cervical muscles, and from the strength of the zygomatic arch (Fig. 4, 5, and 13, 16) and the extent and depth of the pterygoid fossæ. The chimpanzee seems more designed to use his incisors and canine teeth, whilst the molars visibly decrease in size backwards (compare fig. 8, 7, and 17, 16; we much miss here the for-

gotten delineation of the mandibular teeth). Hence the coarse muzzle with broad projecting canine alveoli (Fig. 2, 1, and 12, 11), the large suborbitary grooves, in contrast to the low maxilla and mandibula, and the oblique and weak ramus ascendens of the latter (Fig. 5, 4, and 14, 13); whilst the orang combines the masticating instruments of both, and possesses besides a very odd *additamentum* in the uncommon expansion of the laminæ externæ of the pterygoid fossæ (Fig. 18, 19, and specially fig. 9).

To the conditions just described may be owing the important circumstance that the sexual difference is greatest in the orang, less so in the gorilla, and least of all in the chimpanzee; it thus rises and falls with the difficulty of the struggle for existence. The more mechanical the task, the more material the existence, the more succumbs in the male, to whom is assigned the preservation of the species, the final object of the genus, namely, psychical development. A comparison of fig. 15, 6, and 12, 3, with 13, 4, and 10, 1, as well as with 14, 5, and 11, 2, leaves no doubt as to this pregnant theory. Bischoff's plates of apes confirm an observation which passed like a red thread through my long-continued studies of ruminants. And does not our own experience tell us that woman remains through her whole life nearer the youthful condition, and is bodily the conservative element of the married couple. In this respect she forms, for the preservation of the scale of society, a more secure basis than the male, when he is oppressed by want or passion.

Nevertheless the comparison of fig. 14, and 5, shows that the male chimpanzee, despite his stronger front teeth and his thicker and steeper *ramus ascendens mandibulæ*, outstrips the female in respect to his cerebral capsule, no doubt, perhaps, because he has to incur an easier struggle for existence than the gorilla and orang. The male chimpanzee is also in advance of the otherwise more favourably conditioned females of the gorilla and orang (Fig. 5, 13, 15, and Fig. 2, 10, 12; Fig. 2 and 11 are unfortunately not comparable, as they are differently arranged).

Bischoff's tables also shed some light beyond the limits to which he has confined himself. The resemblance of the young skulls of the two African species to the *Cynocephali*, and that of the young Asiatic to *Homo*, is unmistakeable, although the former is somewhat masked by the tube-like projection of the orbits, and the overshadowing of the same by the supercilia and

the stretched head; and the latter, namely, the resemblance of orang to man by the projecting teeth and the depressed nasal cavity almost without a nasal roof, still the widely-opened eyes are at that time beautifully placed under the dominion and guardianship of the brain. Let us hope that others may soon cultivate this field with materials as rich as were at the disposal of Bischoff.

The postscript of Bischoff, "Remarks on Darwin's Theory," produces the impression that it was intended to supplement certain points which had been neglected in the text. His more polemical than real treatment of the subject cannot be made the subject of a critique. Those points of the Darwinian theory which Bischoff accentuates cannot be discussed by an adherent not less enthusiastic for this theory than Herr Bischoff professes to be, inasmuch as the undersigned differently conceives the same points. I am, moreover, of opinion that the manifold abstractions which the pregnant work of Darwin gave origin to, constitute a very proper subject for verbal, but a very improper one for public discussion. Darwin's doctrines appear to me as a kind of religion for the naturalist, which may be adopted or rejected; but as is well known, it is bad disputing on matters of faith; neither do I expect that much will come of it in the present case. We can be scarcely mistaken in believing that had it been possible, Darwin would have addressed his book only to such persons as would have received it in the same spirit as he presented it.

There is one point only of the section on Darwin which I take the liberty to touch upon, namely, the chapter on the quantitative or qualitative difference between the psychical life of animals and man. I cannot refrain from confessing that I am more inclined to adhere to the views of old Huber than to those of Bischoff. Huber, on being questioned touching the instinct of bees, replied, that we shall not be able to understand this impulse until it shall be possible for us, without any loss of our own power of thought, to transform ourselves for a time into a bee or wasp, and consciously participate in their labours.

ART. IV.—THE SHADOWS OF GENIUS.*

BY WALTER C. DENDY, Esq., F.A.S.L.

ONE of the pet studies of Anthropology is that of Craniometry; the shelves of our museums are loaded with skulls of every form and fashion; and the Neanderthal, the Engis, and a dozen other cranial monstrosities, have been the nine days' wonder of every ethnological arena, as the *missing link* that was to decide the grave question of transmutation and affinity.

The varieties of crania, arranged in a comparative series, and illustrated by faithful record, are, doubtless, of great value; yet the mensuration of Retzius and Camper have, I think, been too often deemed oracular or absolutely indicative of the qualities of that precious mass once lodged within the cranial cavity.

We cannot contemplate the phenomena of intellect without an ardent desire to study the physiology of that mysterious element which we believe to constitute the medium of its exposition. The science of the brain is, indeed, the most important study in anthropology. I do not allude to the fanciful dogmas which dimmed the philosophy of Spurzheim, but to those principles of physiology which elucidate, by induction, the phenomena of intellectual nature. It is a study without which anthropology cannot be perfect: the skeleton without the science of life and mind were as senseless and as barren as the idol that glares within the topes and temples of ancient Hindustan.

The proximate source of the element of intellect must ever be left by the physiologist in mystery. The most learned disquisitions both of divines and metaphysicians, are ever marked by the conventional character of their special thought and contemplation on this momentous question. It is, therefore, more consonant with the precepts of religion and philosophy, to repose in the belief of a primal causation, which all may venerate, without presuming to offer any positive definition.

We may, yet, regard the brain as the exponent of that mysterious element which inspired Shakespeare to create new worlds of fancy; Milton to "presume an earthly guest" into Paradise and Pandemonium; Herschel to bring down the stars of Heaven; Wollaston, Davy, and Faraday to play their splendid tricks with gases and metals; Telford and Stephenson to subjugate the

* Read before the meeting of the British Association, held at Liverpool, 1870 (Department of Ethnology and Anthropology).

laws of mechanics to their will; and Newton to demonstrate the ruling principle of the universe.

It is in its state of *unhealth*, however, when, from the influence of intense thought—when, from excitement or depression, the shadows have closed around it, and mighty intellect becomes

"Like sweet bells jangled, out of tune and harsh",

that the study of brain becomes yet more deeply interesting.

It is these eccentric derangements that so often bewilder the reflection of philosophy, and so completely blight the inductions of our deepest ethnic study. Thus influenced, the children of genius seem to form one special genus of their own, which we have distinguished by the soubriquet of *genus irritabile*, and it is of this psychopathology, the *night* side of intellectual nature, that I have presumed to write. Adapting, for a moment, the minute analysis of brain, we may define intellect or the mind to be a combination of faculties and their sympathy with the senses, and we may believe that each of these faculties may have its seat in some minute and separate cell of the medullary tissue of the brain. We may believe, also, that if one of these cells (in an otherwise healthy brain) be disordered, the function of that cell will be deranged, and will manifest the form of intellectual monomania termed *folie raisonnante*, the madness of one idea.

In illustration I may cite the man of high intelligence introduced to Lord Eldon as the subject for a commission *de lunatico inquirendo*. So charmed, however, was the chancellor with his intellectual brilliancy, as to express his indignant reproof of the accusation that he believed the Queen was deeply enamoured of him. "And how dare you doubt it?" the visitor exclaimed in a tone of intense excitement. The writ was directly issued. A young officer, a patient of my own, had hoodwinked for many hours twenty-four wise and special jurymen, who were at length about to quash the imputation of insanity, when the officer drew a paper from his pocket, and, with melodious solemnity, chanted the ballad of "Home, Sweet Home," *composed by him for their special enjoyment*. The verdict of insanity was directly recorded.

On the contrary, there may be a mass of softened brain, one cell or a group of cells being still in a state of health and functional integrity. Such was the state of an architect of high talent confined in a lunatic hospital; yet from whose elaborate designs, drawn during his detention, a new and noble asylum

was constructed. I know not how otherwise to explain these anomalous manifestations of mind.

In that passive form of aberration—*mental abstraction*—we may believe that if one cell be the seat of intense and concentrated thought, intellect may be so absolutely absorbed in its own *conception*, that impression of a sense may completely fail in imparting the *perception* of an object to the sensuous ganglion. In proof, we may remember the stories of Pliny and Archimedes, and Parmegiano, and Newton, and a host of lesser lights, who, in common parlance, *forget themselves.*

If this idea of the cells of thought be true, they may be overworked and require repose, and I may offer here this counsel to the student. On any sensation of head-pain, or a sense of *straining* effort in composition, to repose at once, to rest from labour, or to change the subject of his study, and take light exercise, *breathing freely and deeply*, so as to ensure a full expansion of the lungs. Wilkie, in the zenith of his fame, often felt that he could no longer work on subjects of high imagination without distress, and he set himself at once to portrait painting as a relief: this was the wisdom of experience.

The spirit of philanthropy cannot but be congenial to the science of anthropology. Under its ægis I may be safe in offering this exposition. I do not sketch these Rembrandt shadows of intellectual *malaise* lightly or idly. I have, I hope, a holier purpose, to endeavour to avert those direful sappings of the brain of genius, by over-excitement and exhaustion—for every deep thought is followed by a change of state, and in the irritable brain may be more or less detrimental, even destructive; yet how may we presume to counsel the councillors, who have so profusely displayed before us the riches of their learning and their wisdom?—and, indeed, it may often be a vain endeavour to check the soul of genius when the frenzy of inspiration has possessed it; and how many a brilliant flash might we not lose for ever by such a triumph of control?

The sparks of Genius may be fanned into flame even in childhood. Genius, like that of Pascal and Mozart, may loom out even in the nursery; and what is our mode of culture of this precocity? Is it not too often the forcing of this germ of intellect by a sort of hot-house education? Unhappily, in the very dawn of thought, the plastic brain is allowed to run wild while

it should be calmly restrained. Thought not only begins to grow, but bursts into bloom while the organism is yet in its bud. There are some men who, like Lord Dudley, never were children. But the mother will be ever proud of her precocious pet—and how often these martyrs of early forcing drop prematurely, or, exalted to frenzy-pitch, themselves extinguish the lamp of life. Byron, conscious of this infantile straining, has written,

> "I feel almost at times as I have felt
> In happy childhood,
> Ere my young mind was sacrificed to books."

The mind may then become a chaos and a blank, or fall into premature senility; these are the wailings of two illustrious in poetry, Byron and Wordsworth—

> "Look on me; there is an order
> Of mortals on the earth, who do become
> Old in their youth, and die in middle age:
> Some perishing of study, and some insanity."

> "We poets, in our youth, begin in gladness,
> But whereof comes, i' th' end, despondency and madness."

Yet, paradoxical as it may appear, there are conditions of brain in which composition may prove a safety-valve: the brain, charged, as it were, with intellectual electricity, relieves itself by flinging off the sparks of its intense ideas. Of this Byron, who was "cradled in convulsion," is again an eccentric illustration. He wrote "to dissipate that despair and despondency with which he wak'd every morning." The "Bride of Abydos" was sketched to keep him from "going mad by eating his own heart." Kotzebue cured his melancholy by writing the deeply-dyed play of *The Stranger*. It is believed that the eccentric Elia had been mad as his sister had he not *written hard*—and so on. So delicate is the hair-line between the sthenic and asthenic conditions of the cerebral tissue.

When Phidias raised his statue of Athênê on the Parthenon, the Greeks called her Hygeia, because she had told Pericles in a dream how to cure his architect. Alas! the deities are too often *antagonistic* in their influence, as we all know.

Contemplating the light and dark hours of these children of mighty genius in all their variety, we might almost indite an elaborate dissertation on their racial elements, and arrange them according to their sentiments and passions. Thus, *en passant*,

among the subjects of acute sensitiveness, I may cite Alexander Pope, who was ever *bitterly bewailing* his systemic weakness. The life of John Keats, after a persistent struggle with his burning imagination, was "snuffed out by an article." These, then, are the Sybarites of Genius. A simple violet would *transport* Viotti: the slightest impression seemed communicated to all his senses at once—"everything spoke to his heart." William Cowper "was a stricken deer from the first," and was maddened in early manhood by the dread of reading bills to the House of Lords! Listen a moment to his groaning—

> **"Long since, with many a horror deep infix'd,**
> **My panting side was charged, when I withdrew**
> **To seek a tranquil death in distant shades."**

I might in another arena explain the pathology of Cowper's melancholy, gathered from the lips of the very *Susan* who let the cat out of the drawer; it was a few months before her death. She whispered to me secrets of which I believe Hayley and Southey were not aware. In Kirk White "the lyric muse destroyed her favourite son." William Beattie asserts that "melancholy marked him for its own," yet we are almost loth to believe this confession. "Since the *Essay on Truth* was printed in 4to, I have never dared to read it over, as it re-excited the *horror* that I felt during its composition."

There is a legion of those whose minds were clouded with the varied hues of melancholy: Ariosto, Dante, Alfieri, Rousseau, Voltaire, Cowley, Johnson, Burton, &c., &c.; and (if I may associate them in the category of Genius) the grimaciers—Grimaldi, and, above all, the French harlequin who, for the relief of intense *hypochondriasis*, consulted an eminent physician in Paris. He assured him he knew of but one remedy—to "look on and enjoy the wonderful feats of Carlini on the stage." The patient directly burst forth with this piteous moan, "Alas! alas! I *am* Carlini."

We must feel the deepest sympathy for the penalties of these children of mighty intellect, who have rolled such a flood of rapture into the world of literature to enlighten or delight mankind, or soothe the pillow of anguish. And their own pillow—did the anodyne of slumber often bless it? Ask the shades of those bright meteors that have blazed but to die. The response of Paganini would hapless be—

> "My slumbers, if I slumber, are not sleep,
> But a continuance of enduring thought,
> Which then I can resist not; in my heart
> There is a vigil, and these eyes but close
> To look within."

The passion of the accomplished violinist almost consumed his being, and he resigned himself to his destiny with the triumphant murmur, "Mais c'est un don du ciel."

Among the intellectual maniacs there was Nat. Lee, who seems to have drawn Cæsar Borgia out of his own heart; Leyden, who threatened to shoot his "best-lover", Walter Scott, and Collins, who ever shrieked wildly when he heard the choristers, and in whom

> "Rays of genius only serv'd to show
> The thickening horror and exalt his woe."

The spectral illusions of Socrates and Tasso, and Tartini and Mozart, and Pascal, are subjects of deep psychologic study.

It will be clear that I am desirous, in this disquisition, to waive theology and metaphysics, and to regard intellect, not in its higher aspect, a spiritual emanation from the Deity, but as a group of phenomena manifested *on earth*, through the medium of the brain, an organ specially endowed.

The etiology of these aberrations of intellect is intimately associated with the quality of the brain, especially in the *firmness* and *extent* of its convolutions. The brain of Cuvier was probably one of the weightiest and firmest on record—sixty-four ounces; that of John Abercombie sixty-three ounces, about fifteen ounces above the average. Perfection of convolutions may be illustrated by those of Gauss, the profound mathematician, and of Sir J. Y. Simpson, which were "twisting and twining round each other as if they could not find room within the head." I believe the grand secret of intellectual eminence may be discovered in this perfection of the convolutions.

Brains of this quality will endure intense mental labour with impunity; in those of more fragile texture its effect will be in varied degrees detrimental, inducing ramollissement, or acute congestion, and it may even influence the condition of the cranial bones. Some years ago, the skull of Swift, carious and transparent, was displayed, with the beautiful skull of Stella, in St. Patrick's Cathedral. This osseous disease may have betrayed

the secret of his polluted mind, and may, indeed, temper the judgment of those who are prone to condemn without reflecting on the overwhelming influence of organic lesion, which reduced so gigantic a genius to "expire a driveller and a show."

The brain is ever under the influence, often the dominion, of its *Sympathies*, especially those of nerve, and heart, and stomach; and these are often so potent that anthropology must be wary of discussing the psychology of men and nations without taking these sympathies into the category (however degrading their associations) that so deeply modify and vary the national character in its sentiment and action.

Anatomy and physiology, therefore, as Rokitansky has affirmed, are clearly the "*root* and *base* of anthropological science", however metaphysically the divine and the philosopher may discourse on the primal source of intellect, without regarding the mode of its earthly manifestation. However unpoetical the process of digestion may be deemed in elegant converse, and even slighted in the psychological arena, all, even the most refined anthropologist, must be nourished by the ingesta of that wonderful pouch, the stomach: there is no spontaneous evolution from nothing in the process of gastric assimilation. Almost directly on this feeding may a faulty stomach and irritable brain become antagonistic. (Byron often exclaimed after a meal, "Oh, fool! I shall go mad.") If in this struggle the brain be triumphant, blood is withdrawn from the process of digestion, and acute dyspepsia may be the result. On the contrary, if the stomach *beats*, the brain *labours on* without its healthy stimulus, often to its own utter derangement.

The further disquisition on the Sympathies would lead me too deeply into relative pathology.

The psychological influence of dyspepsia, in its chronic forms, is yet more distressing. The poet was physiologically correct when he longed for the "dura ilia messorum". Even the stratagems of war may be thwarted and deranged by gastric influence. It was affirmed by Lord Chesterfield, that "many a battle-field was lost in consequence of the general having a fit of indigestion". And, indeed, the relief of dyspepsia has arrested the most direful consequences. Voltaire had engaged to rise early in the morning to commit suicide, in concert with his friend; but, ere retiring to bed, he adopted a most potent stomachic, and

he wrote at daybreak to his friend that his lavement had acted beautifully, and that he would decline the honour of accompanying him to the other world at present. A disquisition on the crasis and current of the blood, although of high influence on psychology, might lead me astray; yet I may briefly observe that, in the illusions of genius, scarlet oxygenised blood will light up fairy dreams, and dark carbonised blood call up the phantoms of Pandemonium. Among the first group of the ghost seers—cheromaniacs—we may class Tasso, Tartini, Santa Teresa; among the second, Blake, Dante, William Cowper. The relief from this "perilous stuff", the black blood, which is a subtle poison to the brain, may have preserved many a noble life. Dryden was so impressed with the truth of this, that "he had himself bled ere he set himself to any deep work". Ravaillac declared that free bleeding would have averted his hand from the murder of the king. Lord L—— was discovered by Bankhead stuffing the self-inflicted wound in his throat with a napkin after the hæmorrhage had relieved the brain of its plethora, and, consequently, of its frenzied excitement.

One other hint. I may remind the deep student that he often, unconsciously, *forgets to breathe*—the voluntary action of the chest is suspended during his intense mental abstraction. John Hunter was conscious that his own pulmonary system had thus suffered, and often adopted free *voluntary* breathing during study. I need only glance at the benefits resulting from intervals of gentle exercise.

In offering these slight remarks on the dark hours of genius, I have desired to inflict no professional dogmas on the Association; yet we profess the study of *the whole nature of man*, and I cannot believe it foreign to the spirit of anthropology to blend with the lighter study of man's form and feature, the deeper analysis of mind, which may promote in the slightest degree the health of those loftier elements that enrol the children of genius among the most illustrious of our race.

ART. V.—NOTES ON THE BUILDERS AND THE PURPOSES OF MEGALITHIC MONUMENTS.*

BY A. L. LEWIS, F.A.S.L.

THE Megalithic, or, as they were formerly called, Druidic monuments, which extend in a practically unbroken chain from Great Britain, through Europe, part of North Africa, and Asia Minor, to India, where in places they are still in use, on the one hand, and something similar to which may be traced across America to Easter Island, the Fiji Islands, and Madagascar, on the other hand, form a most important element in Archaic Anthropology. Could we but fully ascertain the scenes and events these monuments have witnessed, how vast an addition would be made to our knowledge of what are now called prehistoric ages! This knowledge, alas, can never fully be ours; something, however, would be gained if we could, with some degree of precision, fix upon their builders, and upon the purposes for which they were constructed, and it is as a slight contribution to this end that the following remarks are offered.

The "learned and ingenious" antiquaries of the last century have indeed already discovered almost all that we could wish to know respecting these structures, and have fully demonstrated their various and often conflicting theories—to their own satisfaction; but their notions, like many others of the same period, have of late been declared to be entirely unsupported by facts, if not opposed to them. Modern investigation, however, while demolishing or ignoring old theories, has brought us new facts upon which we may in due time base a more durable superstructure of theory than that which has been so ruthlessly upset. Diligent observers, mostly connected with the Government services in India, have shown us that there exist in that country numbers of megalithic monuments, some identical in form, size, and character with certain of our own, and some of smaller size but of similar character; and what is of even more importance

* The substance of this paper was read before the British Association at Exeter in 1869; but it has since been entirely re-written, and is now published for the first time as an introduction to a series of papers descriptive of British monuments, which it is expected the author will contribute.

—that some of them are in use at the present day.* Similar monuments—not merely burial tumuli, which, whether with or without kists, naturally suggest themselves to all races, and are consequently found nearly all over the world—but circles or other monuments, having a distinctly marked and special form, have been found to exist in North Africa, Asia Minor, and Persia, and have long been known in Scandinavia, France, Spain, Portugal, and Italy, so that, as I have stated, there is a practically unbroken chain of these monuments extending from Hindostan to Britain and Scandinavia. Now, as I have observed in another place,† "It seems to me almost certain that there must have been some connection, racial or otherwise, between the peoples who have, in different countries, and, it may be, at different periods, constructed these monuments. It is easy to understand that similar necessities might lead to the construction of rude flint implements of a similar shape by nations which had nothing in common, and which were separated by centuries in time, and by continents and seas in space, but it is not easy to conceive any impulse or necessity that would lead a nation to arrange shapeless stones over acres of ground in a special manner, similar to that used by another nation with which it had had no connection whatever;" and, when we add to this, the consideration that throughout the countries over which the line of monuments from India to Britain extends there have prevailed, and I might almost say do prevail, certain obscure but identical practices and superstitions,‡ we must, I think, come to the conclusion that there has been a very great common influence at work throughout the whole of this area.

Mr. Squier has recently shown me a picture, prepared for his forthcoming work, of a kind of circle in Central America, and circles of some kind are said to exist in Australia, but whether they possess the special characteristics which distinguish those of India and Britain is as yet uncertain; and I propose, therefore, to dismiss them from our consideration on the present occasion, although other traces are not wanting of a possible pre-historic European influence in America, and perhaps from America to the

* Colonels Forbes Leslie, Meadows Taylor, Ross King, Dr. Hooker, Sir W. Elliott, etc.

† Paper read before the International Congress at Norwich, 1868.

‡ See Colonel Forbes Leslie's *Early Races of Scotland* for many interesting particulars.

Pacific Islands. The Tonga cromlech (so called), and the stones set up by the Esquimaux, as described to me by Dr. King, do not seem to have any affinity whatever to our own monuments, and those in Madagascar perhaps owe their origin to an Indian, an Arabian, or even a Syrian source.

Assuming, however, that the monuments of Europe, North Africa, and Asia, have a certain community of origin, we next ask—were their builders of one race? It is not necessary that they should have been—in fact, the barrows, which probably cover their remains, give us skulls of at least two very different characters, even in the limited area of the Wiltshire downs—yet if there be any force in the arguments I have advanced, there must have been such a community of influence as could probably only have arisen from at least a *partial* community of race, caused by immigration, peaceful or otherwise. Nor are other traces of such immigrations wanting, as archæologists well know. The question then arises, where did this influence originate? Did it start from India, and move steadily westward, through Asia, along the Mediterranean coasts, and through France, till it reached even these distant islands, and then, checked by the ocean, turned in a north-easterly direction into Scandinavia? Or was this country, formerly the chief seat of the Druidic system, also the birthplace of the influence under which these monuments were constructed? Or is it not more probable that that influence originated at some central point, and spread gradually thence towards the various countries I have mentioned? What was the social condition of the builders of these structures? They must have been acquainted in a high degree with mechanical appliances; ropes, levers, wedges, and other means must have been largely employed; the inscribed lines found in places, as at Gavr Innis, in Brittany, also seem to have required implements of bronze or even iron, but above all there must have been, in Western Europe at least, such a unity of purpose among masses of men, resulting in such a combined effort and sustained discipline, as speaks volumes for the perfection (after its kind) of the social system under which they lived. Could any of the savage nations of the earth combine, under any social system of their own, to the extent necessary to construct a work—a work, too, of no absolute necessity, such as Avebury, with its enormous earthworks, miles of avenues, and vast circles of huge stones? I answer con-

fidently they could not; and I maintain that the social organisation and general civilisation of the builders of these monuments in Western Europe must have been of a much higher character than those of any native race now existing in the southern hemisphere, and in some respects than those of the peoples who now use similar, but much smaller monuments, in different parts of India. Inigo Jones, indeed, attributed Stonehenge to the Romans, on the express ground that it was a work of art, that the Britons had no arts, and that where no art existed, no work of art could be produced. We, while justly carrying these works back to a further date than the Roman invasion of Britain, have inconsistently sought to attribute them to an unknown race, vaguely spoken of as "pre-historic," and which, if it ever existed at all, we believe to have existed in the most utter barbarism. Who then, were the builders of these monuments? To this question, so far as Europe and Africa are concerned, I think that there can be but one reply—the Celtic nations and the peoples influenced by them, in which category I include amongst others, Celts, Gaels, Umbrians, Iberians, Belgæ and Scandinavians. In Europe and Africa these remains are found only in the countries where Celtic influences exist, or have existed, and where no other races have existed to whom we can reasonably attribute them. With respect to Asia we cannot, perhaps, positively say so much at present, because, as I have already observed, we do not yet know whether these monuments originated there or not, and neither do we know whether the Celts, though called Indo-Europeans, are of Asiatic origin or not, or whether they have influenced or been influenced by the inhabitants of India, or whether some common influence (possibly Phenician) has acted upon both.

In Western Europe, however, where are situated the largest of these monuments at present known, Roman remains, such as pottery, coins, &c., are very occasionally said to be found in connection with them; but this, if admitted, may in some cases be due to accident, in others to the fact of Roman articles being imported before the Roman invasion, and in others to the natives adhering to some of their old fashions, even under the Roman occupation. If, therefore, Roman remains have been occasionally found with these monuments they prove little; but what they do indicate is, that the monuments were constructed by the population immediately preceding the Romans, *i.e.*, the Celts. The Celts, moreover, possessed all the qualifications which we

found to be necessary for their construction; they had mechanical appliances, metal tools, and, above all, a great religious motive, and, in the Druidic hierarchy, a great religious and social organisation and organising power. Nor do I know of any good reason that has been adduced against the Celtic origin of our own monuments, further than that the Celts never built them in historic periods; to which we may reply, firstly, that we do not absolutely know this; secondly, that what we call history introduces us to the Celts while struggling for existence against foreign invasion, and having little time to spare for such purposes; and, thirdly, that Druidism was vigorously suppressed by the Roman policy on the one hand, and supplanted by Christianity on the other hand, when the construction of monuments of this class would naturally cease. It is also urged that the names by which we know them, such as Stonehenge, bear no reference to their object, and that they must be of such antiquity that their object and origin had been forgotten, even before the commencement of what we call the historic periods. They are, however, not named in any chronicle for some centuries after they must have been disused; and disuse for several generations, accompanied by change of religion, and continual foreign invasion and internal discord, amply account for the loss of any authentic local tradition respecting them, especially when we take into consideration the great ignorance and indifference manifested towards all antiquities in all ages by the great mass of mankind. Still they have in many places, and especially in Celtic countries, been regarded with hereditary superstitious reverence, though their purpose has been lost sight of.

The Celts, then, under Druidic influence, were, I submit, the builders of these monuments, so far as Europe and Africa are concerned, and to have arrived at this conclusion will aid materially in the second branch of our inquiry—the purposes for which they were constructed.

In considering these we must bear in mind that, while all had probably some more or less religious or public purpose, it is not likely that the different well-marked varieties had all a uniform purpose, and we must, therefore, examine each class separately. The principal varieties are:—

1. *Alignements*, or arrangements of upright stones in lines. The largest of these is at Carnac, in Brittany.

2. *Cromlechs*, or arrangements of upright stones in circles. The largest of these was at Avebury, in Wiltshire.

3. *Dolmens*, or table-stones (divided by the French archæologists into various classes under different names). These are formed by one or more flat stones resting on upright stones; Kit's Coty House represents one well-marked class, and the dolmens of Locmariaker represent another class.

All these varieties are said by some to have been places of sepulture; and by others, to have been places of sacrifice or worship; this question we will consider presently.

4. *Menhirs*, or single upright stones, which may have been landmarks or commemorative pillars, or tombstones, and in which some trace the remains of phallic worship, a supposition the more probable as the particular class attributed to that superstition exists chiefly on the Continent. There, as we gather from the classic writers, the ceremonies practised were of a more obscene, perhaps of a more Phœnician, character than in Britain, which was the centre of the Druidic religion, where its rites were probably kept more free from phallism, and other matters which are believed to have formed no part of its system. The largest menhir known is at Locmariaker, in Brittany, and must have been sixty or seventy feet high before it fell to the ground. The inscribed stones of Scotland, and Ogham stones of Ireland, are of a different character to this.

There are many other varieties which, indeed, like the menhirs, do not possess that special character distinctive of the circles, but which may have been the product of independent thought in any part of the world; such are cists, formed of flat stones, so arrranged as to form a sort of box or chest, generally covered with earth, and used for sepulchral purposes; peulvens, a smaller kind of menhir, frequently found on the top of sepulchral tumuli; rocking stones, which, however, are generally of natural formation, with other varieties; and there are also remains of a different class, though probably of the same period, which do not come within the scope of the present paper, where the only question remaining to be discussed is the use of the allignments, circles, and dolmens.

With respect to the circles and allignments, it is contended by some distinguished archæologists, that they were intended not for sacrifice or worship, but as places of burial; the principal

argument adduced being, that interments are frequently (not always) found in them, sometimes under nearly every stone of which the circle is composed. Westminster Abbey, however, also contains interments, yet its principal purpose is none the less that of assembly for worship; in fact it is most probable that the practices of burying in places of worship, and of placing those buildings duly east and west, were both derived from the Druids, as are many other very orthodox customs. On the other hand we have the allusion of Hecatæus to a temple, which more resembles Avebury in position and description than any other structure we know of. We have to consider the peculiar arrangement of the stones outside the circles with regard to the rising sun, an almost exact coincidence in which is found in the English and Indian circles;* this coincidence, which could not be accidental, is easily explained by the temple theory, but is altogether meaningless on any other. We have also to consider the great improbability that a huge work like Avebury would have been constructed as a burying-place for one individual, since it probably took more than one generation to complete it, or that it would have been on so symmetrical a plan, had it been a general cemetery; besides which, no interments have been found in it. It has been replied to this that the Pyramids, though sepulchral, were undertakings of at least as large a character as Avebury; to which I answer that, far as I believe ancient British civilisation to have been above some modern notions of it, I cannot suppose that it could compete with the dense and despotically-wielded population and resources of ancient Egypt. It is true that sepulchral mounds are sometimes found surrounded by circles of small

* In England, Stonehenge, the Roll Rich, Dance Maen, and the Long Stone Circle, have each a single stone outside the circle, and in a north-easterly direction; Stanton Drew and the Hurlers each consist of three circles in a line, running in a north-easterly direction; the Nine Maidens circle, at Boscawenun, has a stone in the centre which leans in a north-easterly direction; and, in short, I have only seen two circles which had no reference to the north-east, and in both these there was reason to believe that such reference might formerly have existed. Some of the circles in India have also single stones outside towards the south west; these may be found at Stanton Drew, the Hurlers, Dance Maen, and probably elsewhere. Three circles in line, like Stanton Drew and the Hurlers, are depicted by Colonel Forbes Leslie as existing in India. It must be remembered that, while the sun rises at midsummer to the north-east in England, it rises nearly east in India, and the outlying stones are there placed east, and not north-east.

stones, but these have no outlying stones, and are in no way analogous to the larger circles.

The principal argument, however, in favour of the belief in the sacrificial uses of our circles and alignements will be found in the uses to which similar structures are at this day put in India. Whatever force the arguments I have advanced in favour of the community of influence under which the Indian and European monuments are and have been constructed may have had, redoubles itself in favour of their having a common object. Those arguments were such an identity of plan as could not be accidental, extending through an unbroken chain of communication, and the existence of common practices and superstitions, and other traces of affinity throughout that chain. When, therefore, we learn from Colonel Forbes Leslie and others, that small stone circles and alignements are used to this day in India for purposes of sacrifice, and when we learn that the circles have, as an altar, a flat stone like that called, and doubtless correctly called, the "altar," at Stonehenge, and have single stones placed outside, as in the English circles, it seems to me to be sufficient and conclusive proof that the English circles were used for the same purpose as the Indian,—namely, as places of sacrifice. Dr. Hooker, indeed, to whom I am under obligations for information kindly afforded me, found a number of sepulchral monuments, arranged in a kind of large circle, at Nurtiung, but this again was clearly of a very different character from those described by Colonel Forbes Leslie, and from those which exist in England.

With respect to the alignements, it may be said that Carnac is too large to have been a temple; but we must not forget that in India the number of stones used is equal to the number of individuals, families, or tribes, engaged in the ceremonies, and that this rule probably prevailed in Europe. It may have been considered as great a work of piety to add a stone to the lines of Carnac as it has since been thought to build and endow a church or monastery. Sepulchral tumuli have, indeed, been found connected with alignements in Shetland;* but as the latter were also found unconnected with tumuli, it may be inferred that the tumuli were dependent on the alignements, not the alignements on the tumuli. The fact that small alignements are used in India for sacrificial purposes, turns the balance in favour

* *Memoirs* of the Anthropological Society of London, vol. ii.

of the supposition that our own alignements, as well as our circles, were primarily used for sacrificial purposes.

It is rather strange that, while the circles and allignments have been considered as exclusively sepulchral, the dolmens, or table-stones, many of which, undoubtedly, are sepulchral, have been said to be sacrificial altars. This confusion has possibly arisen from the fact that there are, at least, two classes of dolmens; one class, like "Wayland's Cave" in Berkshire, Chun Quoit in Cornwall, or those at Locmariaker in Brittany, in the form of a chamber or gallery, with or without lateral chambers, still partly sunk in the ground, and, generally speaking, formerly covered, or intended to be covered, with earth, at least as high as the capstones; the other class, like Kit's Coty House, or the "Spinster Stone", which are not in the form of a gallery or chamber, are not sunk in the ground, and never were, or could have been intended to be, covered. Both of these classes are found in India: the former sepulchral, covered to the capstones, and called kodi-kals, or umbrella-stones; the latter, not covered, and without sepulchral remains, called topi-kals, or capstones; these are believed to have been in use about the time of the first Cæsars.*

The first class varies in size. Chun Quoit is about eight feet cube; Wayland's Cave is about twenty-five feet long and four feet high; the gallery at Gavr Inis is over fifty feet long and eight feet high, and is still covered with a tumulus; one at Locmariaker, not covered, is nearly seventy feet long and about eight feet high. It seems to me very improbable that this edifice, seventy feet long, built with enormous expenditure of time and labour, but in places as steep as the roof of a house, and, therefore, notwithstanding such expenditure, most unsuitable for the slaughter of bullocks or other sacrifices, was used as an altar, and similar objections of unfitness apply to other monuments of this class, while no such objection can be raised to their sepulchral uses. Indeed, there is a remarkable analogy between the gallery and chamber in a tumulus, the gallery and chamber in a pyramid, and the cave in the mountain side, which, probably, was the first burial-place, and gave the idea of constructing the others; at first, perhaps, in flat countries, where

* Sir W. Elliott, *Transactions* Congress Prehistoric Anthropology and Archæology, 1868.

mountains did not exist, and afterwards, from force of habit, even where the mountains themselves might have been made available. The fact that some sepulchral dolmens are not now covered with earth may be explained in many ways; and it is not absolutely necessary to their sepulchral uses that they should have been covered at all, since stone cists, of an analogous construction, and known to have been used as tombs, are frequently found in India without any covering;* dolmens, apparently intended for tombs, and without covering, exist in Portugal,† and are found in Aveyron, in the South of France, elevated on mounds.‡ We shall not, then, be far wrong in concluding, as a general rule, that all dolmens of this class were sepulchral.

With respect to dolmens of the second class, it is clear no interment could have been made in them, as they are in no way suited for such a purpose. They may sometimes have been erected over interments, though investigation has in some cases shown that this is not the case; while in India they are found on bare rock which has not been disturbed;§ but I am more inclined to believe that they were used sacrificially, not that, as has been suggested, the flat stone at the top was used as the altar, for such a use would be almost impossible, but that they had an altar placed before them in the same manner as that at Stonehenge before the great trilithon. Some of the dolmens of this class have avenues of stones leading up to them,‖ and others may have been surrounded by circles of smaller stones. An arrangement of three stones, something like Kit's Coty House, without the covering stone, but which may, indeed, have been at one time covered, would seem to have existed at Avebury and at Stanton Drew; and I am, in view of these circumstances, inclined to believe that dolmens of this class were mostly sacrificial, though, perhaps, sometimes erected as memorials, or used, like those in the Himalayas described by Dr. Hooker, to burn bodies upon. Their sacrificial purpose would not, of course, be inconsistent with an occasional and subsidiary sepulchral use.

* Forbes Leslie. † Pereira Da Costa.

‡ M. Cartailhac in *Transactions* Congress Prehistoric Anthropology and Archæology, 1868.

§ Forbes Leslie.

‖ Spence Bate on Remains on Dartmoor. An avenue, with apparently the remains of a dolmen also exists in Addington Park, near Aylesford.

In conclusion, I may add that there are some few monuments which do not come under any of the heads which I have mentioned (such, for instance, as the "Men-an-tol", in Cornwall), and that there are many others which are in such a ruinous condition that it is very difficult to form an opinion respecting them, even from personal inspection, and almost impossible to do so from descriptions, pictures, and sometimes even from models, which are all too frequently defective or utterly fallacious in some point or other.

ART. VI.—THE IRAYAS, YGORROTES, AND MANOBOS OF THE PHILIPPINES.*

BESIDES the Negritos, Dr. Semper saw a good deal of the other wild races of the Philippine Islands, and devotes some of his pages to their description. He designates these people the "Heathen Malayan Races," by which is to be understood different small wild tribes in the remote parts of the islands, exclusive of the Bisayans and Tagals, who constitute the great bulk of the population. Embracing these latter as well as the wild tribes under the general term Malay, he says, of the first immigration of the Malays, every historical document and every monument is entirely wanting. This presumed immigration is spoken of in the face of this fact, and of the knowledge that the races of the islands were pretty much the same as they are at the present day, when they first dawned upon the sight of Europeans. Ethnologists—and every man regards himself to be a competent ethnologist—seem always to feel an inherent necessity for assuming an immigration of people to the region in which they find them. They appear to forget that the simplest, most rational, and philosophical conclusion is that such races as those of the Philippines have always been where they are, and nearly as they are from the beginning, and this beginning may be exceedingly remote. At least there seems to be no right to assume

* *Die Philippinen und ihre Bewohner.* Von Dr. C. Semper. Würzburg: 1869.

these immigrations before we can point to some evidence of such immigration. In the presence of the recent discoveries of paleolithic stone implements in New Zealand, it does not appear at all improbable that the stone implements of the Philippines may at some future period be shown to belong to the prehistoric epoch.

Mr. Crawfurd speaks of the people of the Philippines as belonging to the Malayan races, without apparently meaning more than that the Tagals and other similar people of the islands resemble, or appertain to that division of mankind called Malayan. For Mr. Crawfurd, who was personally acquainted with the people of the Indian Archipelago, and had devoted the best powers of a very acute mind for a long series of years in an entirely unprejudiced manner to the study of these races, both physically and philologically, says, "Some writers have fancied the Negritos to be the original inhabitants of the archipelago, and the fairer race to be intruders from some unknown country; but for this hypothesis there is not a shadow of evidence, historical or lingual, and it must be regarded as the mere dream of the inventors. For anything known to the contrary, both the Malay and Negro race have an equal claim to be considered as aborigines" (*Dictionary*, p. 339).

When compared with the sparsely-scattered Negritos, the number of the independent heathen tribes not changed by Christianity is very great. Upon some islands of the group, as in the east of Mindanao and in the north of Luzon, they live in tolerably close masses; so that by the intimate study of these races, we may hope to sketch a somewhat accurate picture of the social state of the land as it might prevail some centuries before the Christian time, on the arrival of the Mahometan priests. These appear to have advanced from the south-west towards the Philippines on the north and the east.

Within this community of races, which, as Dr. Semper properly says, may best be distinguished by the term "Malayan," the individual races have numerous differences of dialect and of customs, of clothing, of character, and of physical structure, and in many cases indicate obvious traces of foreign mixture. The Mammas on the east coast of Mindanao lead the life of the Negritos, but are essentially distinguished from these by the mingling of relations with their Malayan Christian neighbours.

The very first view reveals a similar mixed race between Negroes and Tagals in the Balugas, living in the fertile province of Pangasinan, to the west of Manilla, in Luzon. The word "Baluga," which means *hybrid*, shows that this race existed before the advent of the Spaniards. Others of these races show an obvious mixture of Chinese blood.

As an example, in order to illustrate this Malay period, the author specifies races in the north of Luzon and in Mindanao, whom he had the opportunity to observe for some months.

"Although the Irayas, living on the western side of the north-east cordillera of Luzon, not far from Palanan, show the Malayan type in bodily structure unmistakably, there may also be perceived amongst them two different kinds of mixture quite as obviously. Chinese blood surely flows in the veins of one branch, which dwells upon the eastern arm of the Rio de Ilagan, the Catalangan, from which they have obtained the name of *Catalangans*. The proper Irayas, on the contrary, on the Ilaron, live socially with the Negritos of the region, are connected with them, and lead with them a happy harmonious life. They not uncommonly mix also with the so-called "Cristianos remontados" —Christian inhabitants of the plains, who have fled before the arms of the authorities into the somewhat inaccessible mountains of the Irayos. Such diversity of mixture is expressed as well in their customs and usages as in their character. Among the Catalangans the fields, in spite of the want of buffaloes and every implement for sowing and harvest—they cut the stems of the rice singly with a small knife—the fields are kept perfectly clear of weeds and stones, and the luxuriously productive rice affords them a superabundant harvest. Among the Irayas, in the strict sense of the word, buffaloes are already employed; but their rice-fields yield them, on account of the little care bestowed upon them, only unproductive harvests. The houses of the Catalangans are mostly finished with very thick high roofs of reeds or grass—the so-called 'cogon'; whilst the Irayas appear to prefer the more easily-restored, but less sheltering, flat roofs of split bamboo canes. While among the former the free places around and under the house, upon which some small monuments dedicated to their gods stand, are kept clean in the most careful manner, the latter suffer all kinds of grass and weeds to grow on them, and, like the Tagals in Manilla, cast below all the sweep-

ings through the chinks of the floor. In their clothing and ornaments the two races pretty much agree. But, while the Catalangans exclusively employ, both as tattoo patterns and also as decorations for their sacred places, characters which appear to me to be of Chinese or Japanese origin, the Irayas everywhere make use of patterns for ornament formed only of straight or simply curved lines, as we have already seen in the case of the Negritos. As in June, 1860, I was going over the Cordillera of Palanan with twenty-one Christians, we were nearly starving with hunger in the midst of the greatest quantity of maize garnered up in the sheds of the Catalangans—for our entreaties for the means of life were met with constant refusal. I felt myself constrained, with weapons in hand, to seize these means of life which they would not give us voluntarily, and for which no payment at that time appeared to be high enough. It was only the firm menace of an uncompromising enforced contribution that brought me into Minanga, from whence I might send back my people at Palanan as much maize and rice as would support them on the way. As a dumb witness of their want of hospitality, my companions pointed out to me, shortly before we arrived in the land of these egoists, in the midst of the forest a heap of stones which, piously following an old usage, the inhabitants of Palanan had cast up in memory of a Christian who had here perished of hunger. On his march through their land the Catalangans would not give him a corn of rice for money or good words. How oppositely the Irayas, living but a few miles off, acted towards me. Here they everywhere lightened the journey by the most hospitable reception, gifts of every kind for me and my people, they made feasts, and they gladly afforded assistance in the ascent of the mountains, and in oars for the boats, and converted our travel into a real pleasure, so that I gave them the promise to visit them again soon, as I was forced to leave the country by a violent fever. Unfortunately, I was prevented from accomplishing this design by the unfolding of my plan of travel.

"But the religion of these two races, notwithstanding many variations, has again so much agreement that we may safely assume to behold in the few cognizable traces which are common to all the other wild races of the land, the remains of a religious faith such as may have prevailed in the former Malay period,

before the arrival of the Mahometans. Besides some pairs of gods upon whose relations and attributes I am not able to be very precise, they do homage quite distinctly to the souls of their forefathers, which they receive under the name of 'Anitos', into the series of their inferior deities. These are house gods, true Lares and Penates. There stands in the corner inside the house a kind of vessel, which has nothing striking in itself, but we easily see that the members of the family treat this corner with great reverence. In this pot one of the Anitos has his seat. The space under the house, which also commonly serves as their burial-place, is rendered sacred by different marks of distinction of other Anitos. Likewise the little space situated before the entrance and side under the roof of the house, before the ladder, the shed in which the smithy is placed, and above all the spots before the house distinguished by special small sheds resembling altars. Harvest also is consecrated to their Anitos, to whom they offer the first fruits in great general feasts. To the other higher gods they appear to devote, on the part of the Catalangans, an especial service in a temple. Unfortunately sickness prevented me from visiting the place where this stood.

Thus the Irayas, with their tolerably highly-developed faith and their worship of ancestors, agriculture diligently pursued, frugal impulses caring for the coming time, and great skill in art manifested in the construction of their houses as well as in their ornaments, stand opposed and superior to the true Negritos. On which account they appear to be less dependent upon nature. In order to defend their rice-fields and tobacco plantations against desolating floods they have built dams. In the rivers they still pursue large fishes with the spear, but they know how to catch by wears the smaller sorts making their appearance in countless numbers at different seasons, which serve them when salted for some months. By abundantly-provided storehouses they overcome the injurious influences of swarms of locusts or bad harvests. And thus is expressed in almost every little occupation of their lives the commencing mastery of man over the powers of nature. But to the omnipotent influence of the season of the year, of the periodical change of the monsoons, with their droughts or abundance of rain, they also listen like their neighbours the Negroes, who ramble about freely as the wild animals; and thus they also regulate not merely the times

for sowing and for harvests by these seasonable appearances, but also their natural and religious festivals by the course of the sun.

"On the western side of the island, in the mountainous region which is commonly distinguished as the land of the Ygorrotes, a number of races live near one another, which are distinguished among themselves, as well as from the Irayas already depicted, in more than one relation. Whilst these latter, in the highest degree peaceable, are marked as industrious agriculturists, the former are spirited defenders of their inherited lands, have frequently driven back the invading Spaniards, and rendered conversion by the Christian priests difficult from heathenish perverseness. Whole districts have been laid waste by this strife in the course of the last decades of years. Here, villages have been burned down and their inhabitants chased away, because one of them has cut off the head of a Christian. There, the tobacco plants, approaching ripeness of their leaves upon hundreds of acres, have been cut down by the soldiers of the Government, in order to extirpate tobacco smuggling. Aqueducts, which conducted the carefully collected small springs of the mountain declivities from the fields raised up in the form of terraces, were destroyed, and everywhere the destructive influence was exhibited, but above all in the so-named Comandancia of the Ygorrotes. Since then, the Government has made a number of smaller provinces out of this mountain district, and has begun to support, or at least not to hinder,"—how enlightened and gracious of the Spanish Government!—"the Empresa Cantabro-filipina, established in Mancayan for working copper mines. Since then trade and commerce have entered into these regions, and with them mutual confidence in a gratifying degree. Although excellent agriculturalists, which the Irayas, their race relatives, are still considered to be, warlike life impresses upon them a particularly austere and unfriendly character, which they frequently moderate by reliableness and openness. The men never go to their field labour without being armed with lance, shield, and a broad hatchet furnished with a point, which latter serves them as well to climb trees as to split the heads of slain enemies. Even in their houses they rarely lay aside their weapons. In this way they are, comparatively speaking, the most industrious of the wild races of the north. They had of old the reputation of being

the most excellent smiths, and even the hatchet, already mentioned, the so-called *aligua*, is exported by them in some measure to the east and north. With greater art they know how to entwine metal chains, and the small clay pipes made by them stand on a higher grade of execution. Besides these there are frequently found little copper pipes mostly in imitation of the form of a man squatting down in the national manner, which are met with from old times in the celebrated marshy places of Buguias. Long before Christian times the Ygorrotes appear to have explored the rich copper mines in the district of Mancayan, out of the products of which, by simple calcination, they made their copper cauldrons, celebrated for their purity. Also they knew how to make ornaments of the gold which they obtained partly out of the quartz mines, and partly washed out of the sand of the rivers. But what especially distinguishes them, as well from their heathen as their Christian fellows, is their inventive powers in the construction of scarecrows, which they set up in the fields to frighten the numerous rice birds away. For this purpose they employ the power of the mountain brooks, streaming through their fields, which they communicate by means of a fitly contrived bamboo reed, giving way to the thrust and then quickly coming back again, to a frequently very complicated system of rattling sticks and moving rags, human figures, &c. Alas, when I came into this region towards the end of harvest, I saw only very few of the smaller of these instruments in motion.

"The somewhat more gloomy and more adventurous spirit impressed upon them by such occupations, which expresses itself also in the other customs of daily life, stands quite in harmony with the greater wildness of nature surrounding them. Only where they rejoice in the deepest valleys in a sunny climate, like the Christian inhabitants of the plains, do they adorn themselves with the bright colours of their head cloths, or with the pure white long mantles which they cast round their bodies. But where in the higher mountain valleys, or in the mountain passes of five or six thousand feet altitude, the inhabitants, in moist soils only producing firs, grass, and a bullock living socially, root arter gold, or on the steepest declivities they must pile up with unspeakable pains the blocks of rock into a wall in order to gain a little spot of horizontal land for their rice culture; there the prevailing indigo blue, which is interspersed with originally white

stripes, stands in unison with the more gloomy mind and the mists of the landscape and the darker green of the pine forests. Only the Philippine falcon *(Falco Pondicerrianus)* hovering over the loftiest heights reminds the traveller that he is in tropical lands, or the dazzling white flowers of an orchis *(Phalænopteris)* two inches long greet him, which swings upon the high fir branches like a female friend from sun bright regions.

"The allied heathen races in the east of Mindanao present to us quite another picture. Among these must be mentioned first of all the Manobos. In spite of the like psychical peculiarities, although there is perceived among them on the first view, especially in the Mandayas, a mixture with Chinese, and notwithstanding their fundamental principles, their prevailing Anito-doctrine, and the internal alliance of their language, here a series of special peculiarities have been developed or obtained which cannot be pointed out in the same cultivation in the races of the north. Whilst these are settled, and from year to year manage the same fields and forge the same weapons, there every chief, every *bagani*, unites the few men directly depending upon him round himself, and lives thus in two to four houses in the thickest forest, far removed from his nearest relatives and friends. Each of his wives, the number of whom is determined by his riches, possesses a house for herself, founded upon high piles, in which she lives with her children and the slaves belonging to her. *One* among them is the proper legitimate consort, who commands the others. She and the children of the *bagani*, his wife's brothers, when these have not founded a homestead, and a number of slaves, who for the most part are prisoners taken in war, must provide for the daily maintenance. Besides tobacco, maize, bananas, sugar-cane, and camote, they cultivate, above all, rice in such large quantities that they obtain sufficient support for themselves for the year, and also an excess for trade. When I, in August, 1864, had lived with the *bagani* Adipan, in the west of the fenny region of Agusan, for many weeks, he was able, when I took my departure, to furnish me by sale with a provision of rice for months, without any diminution of supply being observed in his stock. A few days afterwards I met on my journey, upon the river below, a great number of boats from Butuan, whose Christian inhabitants were drawn into the land of the Manobos to provision themselves for the next half year. More than once

the Manobos, with their abundance of rice, have rescued their Christian neighbours from famine.

"The unsettled mode of life of these Manobos is founded partly upon their mode of agriculture. The thinness of the population, in connection with the amazing fruitfulness of the land, permits them to follow their inclination for isolation, and does not compel them to use any artificial restoration of their fields and watering, nor to lead a settled mode of life. They prefer to make their sowing with less labour, sometimes here sometimes there, which the exceedingly rich soil returns more than a hundredfold. The system they pursue is characteristic of many other heathen Malay races, and is also adopted by many Christian inhabitants of the Philippines. It consists essentially in the most primitive working of the land. The large forest trees as well as the underwood are cut down, and then, after proper drying by the warmth of the sun, are burned. In the ashes and the slightly turned up earth the individual rice plants are set out in bunches, or the rice itself is directly sown. Many rice corns or plants by this means naturally perish; still, that rice which grows up and ripens, gives them in these fertile regions in many places returns of corn two hundred and fiftyfold. In a few years the soil of this so-called "canin" is exhausted, as they neither introduce manure nor change the cultivation. They then go further, establish themselves upon the first spot which looks favourable, and begin the labour of felling and sowing afresh. They build their storehouses upon posts in the midst of their fields. This system of "canines" is also usually adopted by the Christians in all parts in which the thinly-scattered population affords unlimited extent of land for cultivation; but, where the inhabitants are more thickly crowded, they are compelled by necessity to adopt a more settled life, and a more regulated occupation of the same piece of land. In this the Christians are not at all distinguished from their heathen fellows."

How should they? There is a fundamental ethnographic error in distinguishing the tribes, according to whether they are converted or not—into Christian and heathen. They are all in the same condition of primitive people, and cannot reasonably be expected to change their nature when they are induced to accept in any degree, or in any fashion, the dogmas of the Spanish priests.

"But what quite particularly marks out the Manobos from all the other Philippine tribes known to me by examination, is the form of their religious superstition. Although they hold essentially the same Anito worship as the Ygorrotes and Irayas of the north, still the ancestor worship of these is kept more in the background here by the service they consecrate to other gods. Thus they hold thunder to be the voice of the lightning, which they revere in the form of a strange animal. When lightning falls upon the earth and strikes a tree, the animal, in their opinion, strikes one of his teeth into it. There are old stone hatchets, belonging to a former period, which look like those found in our European pile buildings, and have been discovered by them sticking in trees or in the earth. The crocodile also is held by them as sacred. But the most important of their gods, next to the *Dinata* (= Anito) of the harvest feast is the god of war, to whom red colour is sacred. When in the region of the marshy district of Agusan, around which the different families of the Manobos penetrate, in October the harvest has commenced, the men begin to polish their spears and shields, their daggers and short swords; and when the harvest is ended, and the talisman of the war-god has notified to them the favourable event, they move in small troops under the lead of their *bagani*, who is at the same time the priest of the god, and who must bear his talisman in battle in a secret manner to the dwelling of their enemies. It is fit for them to surprise their enemies early in the morning while they are sleeping, or in the forest, when every adult male is put to the sword, the children and women being carried away as slaves. Only rarely does it come to single combat, and this always happens to the leading *bagani*, as he, the most courageous of his people, goes first, and, as priest, has to bring an offering to his god. When the enemy is successfully defeated and killed, then he draws a sacred sword devoted to this service only, opens the breast of the dead body, and dips the talisman of the god, which hangs round his neck, in the smoking blood. Then he tears out the heart or the liver, eats a bit of it as a sign that he has now satisfied his revenge upon the foe. It is never allowed the common people to taste human flesh. It is the prerogative and also the duty of the princely priest. There always lies some personal motive at the foundation of their wars. But mostly the appeasing of their revenge takes another, not

religious, character. Individually they lie in wait upon the roads for their enemy, whose motions they have explored and watched for weeks, and strike him down from a safe hiding place with their long spears. They then bring the skulls of their enemies in triumph to their houses, but they do not hang them up in and before the house, as many heathen tribes in Luzon do, as signs of their bravery. Some of the slaves they carry home are always devoted to the war-god, or to the god of their diseases. Standing at the edge of the grave dug for them, their lives are taken with the sacred dagger or sword with a few sure strokes. The other slaves, relations or friends of the offering, must fill up the grave with earth.

"Thus the Manobos stand opposed to some other nearly allied tribes of Ygorrotes and Irayas as religious fanatics, in whose worship the offering of men and cannibalism play a predominant part. Among these three representative people, approaching the extreme pure Malayan state of culture, there is probably found all possible differences of the race, which run parallel to the differences of dialect. The older Spanish writers mention as a remarkable, but afterwards quickly forgotten, fact, that the Negritos all speak only one single similar tongue, whilst the brown inhabitants of the different islands, although all surely belonging to the same race, differ in the great number of their dialects. Only in some few, but certainly essentially, characteristic traits, do they all agree.* Once they were all, according to the testimony of the same Spanish writers, agriculturists, and cultivated rice in such quantities that already, at the advent of the Spaniards, it formed an article of trade. Several of the tribes might have been settled and pursued agriculture in such perfection as the Ygorrotes do now. They then all lived divided into small clans, each of which was subject to a prince or chief, or *bagani*. Although the Spaniards in their descriptions were tolerably liberal with the word *Rey* (King), yet they frequently used the term *Reyezuelo* (a smaller king, *regulus*), and still more the explanation often given to it shows that the power of this king, only in the rarest cases, extended beyond the immediate territory of the village. The com-

* A contribution of importance, relating to the languages of the Philippines, has just appeared in the *Transactions* of the Batavian Society of Arts and Sciences, vol. xxxii. Batavia: 1868. It is entitled "Bijdrage tot de Kennis der Talen en Dialekten voorkomende op de Eilanden Luzon of Lesoeng, Panai of Ilong-Ilong, Balangingi, Solog, Sangi, alsmede op Noord- en Midden-Celebes." Door J. G. F. Riedel.

mencement of the foundation of a state appears to have been effected only at a few points, at which, shortly before the arrival of the Spaniards, the Mahometans, coming from Borneo and Ternate, had settled down. All civil contentions, according to the old customs of the princes, who maintained their position partly by rank, but especially by personal bravery, were settled in council by the elders of the village. Lastly, there was developed, by the custom of people of rank selecting their concubines among the female slaves seized in war, in the course of time as the few houses of a family enlarged to a village, the class of free or *Timavas*. The children of these, or even their kinsmen, who had served long as slaves were granted freedom; and this class of the free stood between that of the people of rank, who by their marriages sought to keep themselves as pure as possible, and that of the slaves, who must always expect to be offered to the war-god, or to be sold as an expiation for some wrong done. This was the social state of the inhabitants of the Philippines when the Mahometans and the Spaniards, from two different sides, sought to introduce their religions into the land."

We have thus given the account of the chief aboriginal tribes of the Philippines, so very little known to ethnographers, in the language of Dr. Semper, for we regard it as an important contribution. This gentleman lived some years in the islands, and during his various journeys came into intimate contact with these tribes, and studied them carefully, evidently with a mind well prepared for such study. Their moral, social, and religious state was that which engaged his principal attention. Their physical peculiarities obviously attracted less of his notice, which gives rise to some defect in his picture, and was, no doubt, occasioned in a degree by his too readily conceding to general terms, such as "Malay races." Under that designation the inhabitants, not merely of the Philippines, excepting the Negritos, but of many other large and populous islands, are classed pell-mell, as those of the vast islands of Borneo, Sumatra, Java, Celebes, and innumerable small islets. The study and discrimination of these numerous races will afford profitable labour for many observers. The example set by Dr. Semper is of great value. It also proves him to be an accomplished anthropologist, from whom much is to be hoped. It is not surprising that, on his return to his Fatherland, he should have been selected for the important office of secretary to the German Anthropological Society.

ART. VII.—THE PEOPLE OF THE ISLE OF MARKEN.

BY DR. CHARNOCK, V.P., F.S.A.*

THE Isle of Marken is situated in the Zuider Zee, off the coast of North Holland, ten miles north-east of Amsterdam. It is reached by ferrying across the Ij, and by taking the road to Broek and Monnikendam,† whence it is distant about three miles. With a fair wind, the island may be reached by a fishing-smack from the latter place in half an hour; but when the wind is unfavourable it may occupy two or three hours. It took me two hours and a half to cross, and one and a quarter to return. When the Zuider Zee is frozen over, the communication is kept up by means of sledges. The island is three-quarters of a league in length by a quarter of a league in breadth. The entrance to the harbour is difficult, and was crowded with fishing-smacks. The houses are of wood, and built on artificial mounds, the island being liable to inundations, when, in winter time, the Zuider Zee is not frozen over. On such occasions, the people are sometimes up to the middle in water.‡ There is only one village. The Markeners are now on the increase. The *Edinburgh Gazetteer* puts down the population in 1827 at 800; Gaspari gives the numbers in 1850 at 571; Johnston§ makes it 733 in the same year; but the two latter are probably founded on old returns. Meyer‖ makes it 600 in 1851, but he also queries it at 800. The people now number 1100, but some of them are obliged to reside at Monnikendam, from want of house accommodation on the island. Only two of the inhabitants are from the mainland; the doctor, and one of the two bakers.

The people are tall, broad-shouldered, strong, and rather good-looking; and are accounted as giants by the mainlanders. One of them, who measured six feet two inches, informed me that he was not the tallest man in the island. I accosted a fine strap-

* Read before the Anthropological Society of London, Nov. 1, 1870.

† *Die Gegend des Zuydersees zwischen diesen Insel und dem festen Lande heisst Goud-Zee.* Gaspari, Erbeschreibung: 1820. Band xi.

‡ In 1825, the island was visited by a hurricane, which caused great damage. *Dict. Univ.* Bruxelles: 1839.

§ *General Gazetteer.*

‖ *Das Grosse Conversations-Lexicon.* Hildburg: 1851. Band xx.

ping fellow, who stood quite five feet ten inches, whom I should have taken for twenty-eight years of age. He told me he was only eighteen. The head is well formed; the nose broad and long; the eyes deeply set; the eyebrows shaggy; the mouth large; the *arcus oralis* is strongly defined. The hair is very light, almost yellow; the face bronzed. The women have broad faces, large mouths, compressed lips, and good eyes. They do not show themselves much, and rather avoid strangers. At one of the houses, I was introduced to an enormously fat woman, who had been exhibited a few years since at the Amsterdam kirmes. She was quite six feet high, and was thirty-six years of age. A pamphlet lately published at Amsterdam states, also, that, at one of the kirmes, was shown a Marken child, which was said to be only three months old and to weigh several hundred pounds; but this is certainly a very great exaggeration. The Markeners are intelligent, polite, agreeable, and sober. They occasionally drink schiedam, but not beer.

The male attire consists of a double-breasted, closely-fitting jacket, over a red flannel waistcoat, which is partly visible, wide petticoat trousers, of dark cloth, and an embroidered neck-tie, of a light colour, adjusted in a somewhat feminine style. They sometimes wear ordinary shoes, but frequently only woollen nether stocks, which are made by the women. The dress of the women is as follows: White bodice, over the sleeves of which, from the elbow to the wrist, is a dark brown stuff. A violet coloured spencer covers the bodice, and over the former is a garment, shaped like the bib of an apron, and reaching from the clavicle to the waist in front, and from the scapulæ to the waist behind. This garment is coloured green in front and red behind, or the reverse, and is embroidered in Marken style. A dark stuff dress reaching to the ankles is worn over a white petticoat. They have coarsely knitted blue stockings, and leather shoes with buckles. A white shako, with an insertion of coloured ribbon, forms the head dress; and a coloured kerchief is worn loosely round the neck. The out-door dress is a striped jacket of coarse stuff, which is worn loosely over the spencer. The front hair is cut square, and on either side hangs an Alexandra curl. The second and third fingers of the left hand are usually adorned with several rings. The dress is peculiar to the

women of the island, and of those of them who are compelled to live on the mainland.

The interior of the dwellings is clean, and they are well stocked with furniture. The walls are adorned with bright copper dishes and pans. The beds are made in alcoves; some of these are so high up that they can only be reached by steps. They are enclosed by curtains, and contain great piles of cushions and pillow-cases. The latter, and also the coverlets, are worked in Marken style. These beds are seldom used. The Dutch call them *pronk-beds—i.e.*, state-beds.

I was informed that the proportion of males to females is two to one. Prostitution is unknown. It, however, occasionally happens that the first child is born before the usual period of gestation. Marriages are usually contracted at about twenty-two years of age. There are but few marriages between the people of the island and those of the mainland. The proportion is about three in a thousand. The burgomaster is married to a mainlander. The marriages are prolific; six, seven, and eight children are very common. One man stated that he had been married thirteen years, and that his wife had had nine children. In 1869, the births numbered forty-six. Of males born this year only two are living: I was not able to learn the reason. The Markeners often attain seventy and eighty years of age. They are very free from diseases; the doctor being usually called in only in accouchements. Five years since, there were thirty-six deaths from cholera. The people are nearly all Protestants. There is one church, and one missionary establishment; the latter is held in a private house. The people are very fond of theological disputes; are superstitious, and still believe in ghosts and witches. Education is compulsory, and most of the people can read and write. They speak a patois; but any one conversant with the Dutch language can understand them. The island does not produce any vegetables; and the only trees are two apple trees in the garden of the burgomaster. Nearly all the provisions are brought from the mainland. There are four small farms, one of which supports eighty sheep; another fourteen cows. Nearly all the male population are engaged as fishermen, or as fish-salters. In summer, they set sail on Monday, and return on Friday night; in winter, they leave on Sunday night, and return on Saturday night. The children amuse them-

selves with tame sea-mews, each of which has an iron ring round its neck.

The chief diet is fish; but in the month of November, at the time of the *slaght—i.e.*, "the slaughtering"—each family purchases a quarter of an ox or a pig. While at sea, they eat flour-cakes mixed with salt water, fried with lard, and sprinkled with syrup. They pay no tax as fishermen, but are taxed as carriers. Military service, and the decay of the fishing trade, have deprived the Markeners of much of their originality.

It is probable that the island originally formed part of the mainland; but whether it arose through an inundation which caused the Zuider Zee, or is of more ancient origin, is doubtful. According to some, this inundation took place in 1413; but this date probably refers to the latest inundation. Others state that the Zuider Zee was formerly only a lake (*Lakus Flevo*), and that the latter became joined to the North Sea by an inundation in 1282. Godefroy, a monk of St. Pantaleon, says, in his Chronique, that this took place in 1170, and that the ocean broke into Friesland, and inundated most of the country towards Staveren. But Ubbo Emmius, in his *Histoire de Frise*, shows, on the authority of Emon, Abbé of Verum, who lived in Friesland at the time of Godefroy—*i.e.*, in the thirteenth century—that the great inundation happened towards the year 1225. Lamartinière, referring thereto, says this inundation formed, with Lake Flevo, a sea of thirty leagues in length, which is called Zuider Zee—*i.e.*, South Sea. He says, further, that the Flavo lake, which extended as far as a point opposite Eastern Friesland, is mentioned by Mela. It is quite possible, therefore, that the island of Marken may have been in existence at the time of Mela, and also of Drusus, who, by turning the course of the Ijssel, formed the lake in question.

The Dutch usually call the island *Mar-ike*, not *Marken;* hence the French orthography *Markea.* The name would seem to be derived from some district on the mainland, in which it is included, just as the Isle of Wight is reckoned a part of Hampshire. This is confirmed by Johnston's *Index Geographicus*, which gives: "Marken Isle, North Holland, 52.27 N. lat., 5.8 E. long.; Marken, North Holland, 52.27 N. lat., 5.7 E. long." The name of the district may mean "limit" or "boundary". Marcken, or Marken-Hared is the appellation of a place in West Goth-

land; there is Markendorf in Brandenburg in Prussia; Marcke, a village and commune, West Flanders; and Marcq in Hainault. Or the district may have been named from a river. There is Marke, a river of Oldenburg; Marck, or Merck, a river of Belgium, prov. Antwerp. The exact date of the first settlement of the Markeners on the island is doubtful; but all agree that it was as early as the seventeenth century. It has lately been proposed to drain the Zuider Zee, but there is no prospect of this being attempted at present.

ART VIII.—SCHOPENHAUER AND DARWINISM.

THOSE of our readers who remember the remarkable article in the *Westminster Review* of April 1853, on Arthur Schopenhauer, the Frankfort sage, as he has been styled, under the title of "Iconoclasm in German Philosophy", or those who may chance to have read the present writer's series of articles on the same subject in the *Parthenon* (1862), will not require to be told that Schopenhauer was one of the most original thinkers of this century, and not less distinguished as a lucid writer. The son of a highly cultivated and wealthy banker and of a gifted mother, herself a writer of eminence, who, in the early period of her married life, enjoyed the friendship and counsels of Dr. Jameson, the chaplain to the English colony at Dantzic, his education was a desultory and many-sided one, but, from these very circumstances, of a liberal and cosmopolitan, as well as of a matter-of-fact, character. It may be said to have begun, as Rousseau demands, even before his birth; for his father took his young wife to England while in an interesting condition, being desirous that the expected young citizen of the world should be born on English soil, and thus acquire the birthright of a Briton. The delicate state of the mother's health, however, necessitated her return to Dantzic, at that time a free town, where Arthur Schopenhauer was born on February 22nd, 1788. In March 1793, his parents emigrated to Hamburg, during their twelve years' residence at which they travelled

about a great deal, everywhere taking their young son with them, whose education as a citizen of the world was one of the objects of these travels never lost sight of by the father. At nine years of age, he was left with a correspondent of his father's, a M. Grégoire at Havre, where for two years he shared the private lessons of young Grégoire, a boy of the same age as himself. There he spent the happiest time of his boyhood, and became, what the father wished him to be, quite a Frenchman. He returned to Hamburg in the spring of 1803. His parents, chiefly with the intention of weaning him from his love of science, set out with him on the grand tour. They made a six months' stay in England; and, during the excursion of the parents to the north of the island, young Arthur was entrusted to the care of a clergyman at Wimbledon, and here he laid the foundation of his subsequent familiarity with the language and literature of the nation with which his mind owned kindred. At New-year in 1805, he was apprenticed as a merchant to Senator Jenisch at Hamburg, with whom, notwithstanding his intense dislike to commercial life, he continued for some time after the death of his father in 1805. Fortunately, he was rescued from this position by the advice of Fernow, the editor of Dante, and the intimate friend of Arthur's mother, who showed him a letter from her son, in which he gave utterance to the inner discord generated by despair of himself. He was now sent to the Gotha Grammar School, and thence to Weimar, from which he proceeded to Göttingen, entering himself at first as a medical student, but soon after, under the guidance of G. E. Schulze, author of *Ænesidem*, exchanged the study of medicine for that of philosophy. In 1811, he repaired to Berlin, attracted thither by Fichte's fame. Having completed his terms at the University, he retired to the charming Rudolstadt Valley in Thuringia, and here he composed his inaugural dissertation, "The Fourfold Root of the Proposition of the Sufficient Cause", for the purpose of taking his degree. The young doctor soon after enjoyed the inestimable advantage of an intercourse with Goethe, whose penetrating judgment easily discerned the superior order of his young friend's intellect.* Among philosophers, too, his treatise excited much attention; certainly more than his great work, published November 1818, *The World as*

* See Goethe's Correspondence with State-Councillor Schultze, p. 149.

Will and Conception. He sent an early copy of the latter to his friend Goethe, whereupon his sister Adele writes to him (he had since left Dresden for Naples, whither the proofs had followed him): "Goethe received your work with great delight, forthwith cut the thick volume into halves, and instantly began reading in it. An hour after, he sent me the enclosed slip, and a message to say he thanked you very much, and believed the book to be good. As he always was so lucky as to light on the best passages in books, he had read the pages set down in the slip, and been very much pleased with them. He intends very soon to write you his opinion more fully; meanwhile he charges me to tell you so. A few days after, Ottilie (Goethe's daughter) told me her father sat over the book, reading it with a zeal such as she had never yet witnessed in him. He said to her he now had a treat for a whole year; for now he would read the book from beginning to end, and thought it would take him that space of time to do so. He then told me he rejoiced very much at your being still so attached to him, having had some difference with you about the theory of colours. What he particularly admired in your book was the lucidity of diction, though your language differed from that of others, and one must accustom oneself to call the things by the names you gave them. But once having got this knack, and knowing that horse is not horse but *cavallo,* and God perhaps *Dio,* or something else, one could read on easily enough. He also liked the whole arrangement very well, only the ungraceful size would not let him rest, and so he fancied to himself the work consisted of two parts. When next I go to see him, I hope to speak to him alone again, and perhaps he may say something more satisfactory; at least, you are the only author whom Goethe reads in this way, and with such zeal." Some time after, Jean Paul said of this work: "An ingenious, philosophical, bold, many-sided work, full of sagacity and depth of thought, but with a depth often comfortless and bottomless—comparable to a melancholy lake in Norway, upon which, owing to its dark encircling wall of steep rock, one never beholds the sun, but deep below only the starry day-sky, and over which neither bird nor wave passes." Nevertheless, besides calling forth a few reviews, the work, on its first appearance, was almost wholly neglected.

As it is not my purpose here to write Schopenhauer's bio-

graphy, I pass over his various migrations from the time of his brief sojourn at Berlin, where he made an unsuccessful attempt, as lecturer on Philosophy (*Privatdocent*) in the University, to gather hearers about him, Hegel being at that time at the zenith of his fame, to his finally settling, in 1833, at Frankfort-on-the-Maine, where, to the day of his death, September 21, 1860, he lived, as his biographer, W. Gwinner, says, "among shopkeepers and money-makers—aye, even among the doctors—of this excellent city, unmolested and unknown."

Besides his great work, subsequently enlarged to two volumes, he published a treatise on *Light and Colour* (of which a third edition has just been issued), in which he supports, in the main, Goethe's theory of colours; an essay on *The Will in Nature*, a treatise on the freedom of the human will (which obtained a prize from the Royal Norwegian Society of Science at Drontheim, in 1839), and another on *The Basis of Morality* (a second edition of both of which he prepared shortly before his death); and, lastly, *Parerga and Paralipomena*, being miscellaneous philosophical essays, in two volumes, of which a second enlarged edition was published in 1862, edited by Dr. Julius Frauenstaedt, who has inherited the copyright of all Schopenhauer's works. If, in addition to these performances, we mention a translation of Balthasar Gracian's *Oracula Manual, y arte de Prudencia*, which was found ready for the press among his posthumous papers, and published in 1862, we have enumerated all that emanated from his pen in a life of seventy-two years. For one whose pecuniary means enabled him to live an independent life, wholly devoted to study, the quantity of his writings may appear very small, but then the quality is all the higher. In these few volumes he contrived to compress more original thought, and, what is of greater importance, more truths, than are to be met with in the works of the far more voluminous, and the very reverse of luminous, philosophers, whose names for a long period entirely eclipsed Schopenhauer's; but his day did come at last, and he is now fully recognised as one of the greatest lights among the philosophers of all countries and all times.

I believe I am not saying too much that it was mainly owing to the article in the *Westminster Review* referred to above that his name was at length blazoned forth, even to the German world, and that he at last began to be studied and appreciated.

For that article was translated by Frauenstaedt into German, and, being published in the *Voss Zeitung* at Berlin, created much sensation at the time. The eyes of the German public were opened by the English reviewer to the great thinker that lived among them, and had been so long unnoticed. Then it was that Frauenstaedt popularised his philosophy in a series of *Letters on Schopenhauer's Philosophy*, to which the said article served as an introduction; and it may be gratifying to the writer of the *Westminster Review* article to hear that Schopenhauer was highly satisfied with his *exposé* of his system, and referred me to the extracts as models of translation. In attempting to give to the reader who has not seen the article in question an idea of what Schopenhauer teaches, I might simply refer to the title of his great work, and say, there is all the explanation you require; or I might say his system is a compound of Kant, Plato, and Buddhism, and, indeed, his own words, in his preface to the first edition of *The World*, might seem to justify such a statement.* But neither mode of proceeding on my part would be doing justice either to Schopenhauer or to the reader. The title tells much, but not all; and Schopenhauer's own statement might suggest the erroneous belief that his system was a species of eclecticism, having no claim to any originality; that he had culled some thoughts from various quarters, and strung them together into some more or less harmonious system, to be palmed upon the public as something new. Whereas it is much nearer the truth to say that, like Shakespeare, he drew from various sources, and has been candid enough to name them at the outset, not hidden away in a corner or at the end of the volume; but he has added so much of his own, and amalgam-

* I may mention that had Schopenhauer known more of Judaism than is contained in its most ancient records, the Sacred Scriptures; had he known what the Jewish doctors say in their commentaries on the same; had he been acquainted with the system of Solomon ben Gebirol, the Spanish poet and philosopher of the eleventh century, who had so long been concealed under the name of Avicebron, until the late Solomon Munk, as librarian of the French Imperial Library, succeeded in discovering his identity with that supposed Arab philosopher, he would, in fairness, have had to add that, more than anywhere, the germ, or rather the main feature, of his doctrine might be met with among Jewish philosophers—with this difference, however, that they regard as an attribute, a portion of divinity, what with him is divinity itself, if such a term found any place at all in his system.

ated the ideas borrowed into so wonderful a whole, that it strikes every one as a new creation, and has, indeed, all the merits of one.

In now proceeding to my preliminary task, of conveying to the reader an outline—though but the merest, faintest outline—of the system, I am happy to be able to state for his satisfaction, and as a guarantee of the accuracy of my summary, that it is one which had the approval of Schopenhauer himself. It originally appeared as an introduction to a paper of mine on Schopenhauer's Philosophy of Music in Brendel's *Anregungen*. On a subsequent occasion, Schopenhauer having proposed me as a fit person to write an article on his system for the *Révue Germanique*, on behalf of which some one applied to him, he advised me to reproduce that summary in the article, adding, "it is no plagiarism to borrow from oneself."* The summary thus certified by the hand of the master ran as follows.

"The final result of Kant's philosophy, expressed in the concisest terms, was the proposition, so humiliating to human cognition, but, at the same time, so fertile in consequences, that we can know only *phenomena*, or the outward appearances of things, but not the *noumenon*, or the thing in itself. Fichte's Idealism, Schelling's Philosophy of Identity, and Hegel's Absolute, originate alike in that proposition; but while these various systems were successively and simultaneously contending for sway, and Hegel's especially had all but universal homage paid to it, Schopenhauer had, silently and unnoticed, thought out Kant's great thought, and lifted the veil which had till then hidden the thing in itself from our mental eyes. It is remarkable and characteristic of the imperfection of the human intellect, however high the degree it may have attained, that Kant, who so happily discovered and so correctly showed how it is only by virtue of our own *à priori* ideas of space, time, and causality, that we are able to have cognition even of the appearances of things, should never have suspected that we carry within ourselves the key for the other side of the world, for the thing in itself. The fact is, the world had, since Descartes and his famous *Cogito, ergo sum*, been too much prepossessed by the idea of finding everything in the intellect, even for a Kant to have been able to emancipate himself

* See Arthur Schopenhauer's Letters to the present writer in R. Printz's *Deutsches Museum*, No. 34, 1865, p. 287.

from the delusion. Be that, however, as it may, Schopenhauer wrote his immortal work, *The World as Will and Conception*, inverting the order of things by giving the will the priority, and assigning to the intellect only the secondary rank, and thus breaking the spell which had till then held the minds of men bound. 'All philosophers', says Schopenhauer, 'have erred in giving the intellect the priority.' According to him, it is the will, that vital, real, and indestructible substance of man and all beings, which, however, is unconscious, to which precedence must be allowed. The will is metaphysical, the intellect physical; *i.e.*, the production of the brain. The will, which is identical in all beings, while the intellect varies widely in degree, not only among the different beings, but among men, is *the thing in itself*. In perceiving it in ourselves, we also perceive the world as will; but all objects, our own bodies included, in which the will becomes manifest to our eyes, alone depend on, or are the product of, our conception, and form the world as conception. Now, while the unconscious, unknowing will remains immutable in all beings and things, it nevertheless *objectivates*, or manifests, itself by degrees, according to the *principium individuationis*, and thus the world of phenomena, or the chain of beings, from the great heavenly bodies to man, in whom the intellect, as the light of the will, attains its highest development, enters into our conception, and deludes it with the idea of their forming the true eternal being. Thus, the veil of Maja (as the ancient Hindoos designate it) is cast over our eyes, and conceals from us the true essence of things. We stand amazed before the phenomena, incapable of deciphering either them or our own existence. Then it is that we turn either to Art or Philosophy; for both equally strive and labour to solve the problem of existence—the former by means of contemplation, the latter by means of reflection. Art proceeds from the ideas: these, the eternal ideas, which dwell in the things, and, unconsciously to it, float before the will in the process of its objectivation or manifestation, are the true and only sources of every genuine work of art; and, as the artist himself contemplates them, he endeavours, without, however, being conscious in the abstract of the purpose and aim of his work, by means of it to reproduce those ideas."

Here, then, are, *in nuce*, the principles of Schopenhauer's meta-

physics and æsthetics, and it remains but to give the reader some slight idea of his ethics. If in the former, he showed and acknowledged himself, as regards the starting points, a follower in the one of Kant, and in the other of Plato; in the latter, he takes his stand wholly on Buddhism, though not without coinciding at the same time with Christianity, the religion of sorrow, as Thomas Carlyle has so felicitously designated it, in his views of life. These are of the gloomiest, darkest, and his description of the misery of life, painted in the colours of a Rembrandt, and grand as the outlines of a Michael Angelo, has nothing to equal it in all literature, except the first portion of the Book of Job. He is an avowed pessimist;* and nothing can reconcile him to the optimism of Judaism but the story of the Fall of Man. The will having, by the light of the intellect, recognised life to be "suffering," and nought but "suffering," no longer *wills* life, but on the contrary, desires to abnegate it. This is the turning point of his doctrine. He does not, however, recommend suicide, except in particular instances, for the simple reason that an individual suicide could never put an end to existence, to life in general. What we have to do for ourselves is, to seek the extinction of desires, quietism, such as the mystics of Christianity; more especially, however, as Buddhism has taught it, in which latter religion it is called *Nirvâna*, as opposed to Sansâra, words which for English readers, with Max Müller's works before them, will scarcely need an explanation. From the same quarter he borrows the fundamental principle of his ethics, "compassion." Suffering man looks around him, and recognising the same will that constitutes his own vital principle in all other beings, says to each, *tat tvam asi* ("thou art this"); and compassion with the sufferer dictates charity and kindness to him. The attentive reader need not be reminded that Schopenhauer might have found the same principle, substitute only "love" for "compassion," much nearer home, for the old biblical precept, "Love thy neighbour as thyself," on which, as the Jewish sages remark, the whole law depends, conveys the same doctrine. But, as we have

* If the *Saturday Review*, some time since, in a casual allusion to Schopenhauer, ascribed the origin of his pessimism to the neglect from which he suffered for so long a period, such an opinion is at once disproved by a reference to the first edition of his great work, where it will be found that he entertained those gloomy views of life before he experienced that neglect.

said before, chiefly owing to its *πάντα καλα λίαν* or its optimist character, Schopenhauer had an antipathy to Judaism, and must needs go to other sources for a support of his theory. The reader must, however, not suppose that these three leading features of the system form even an adequate outline, let alone conveying to him even the slightest idea of the vigour and clearness of thought and language that distinguish this philosopher above all his German predecessors. Reading him has justly been likened to plunging into a cold bath; it is so refreshing, so invigorating, whatever may be the effect on us of his final precept—aiming at Nirvâna. Like every complete system that seeks to explain the world, his, too, embraces the world, and ramifies into all questions connected with human life, including law, politics, the arts and sciences, and so forth. And thus it is that he also came to treat the question of sexual love, which we have chosen as the theme of the present article. He devotes a special chapter to the question in the second volume of his great work, which forms a supplement to the first, commenting upon and amplifying the doctrines contained in the latter. I shall now place before the reader the substance of that remarkable chapter, being a commentary on that in the first volume, headed "Affirmation and negation of the will." Sexual love of course springs from the former as its metaphysical root, and, as Schopenhauer has justly compared his system to the ancient city of Thebes with its hundred gates, each of which led into the middle of the city; because every part of it, like the radius of a circle, emanates from, and converges into, the centre, the reader may now enter by the portal I am about to open. At the same time he will find the answer given to the question, What is the real cause of the undying interest with which sexual love is invested? equally novel and striking. He will find that it clashes with the mythological representation of Cupid as a blind, or at least, bandaged god, and with the familiar saws about the blindness of love. All these he must dismiss from his mind as preconceived notions of a subject never thoroughly examined before, and though both tradition and daily experience seem to favour them, he must remember that many other erroneous notions, entertained for centuries, had finally to give way before the light of truth, and that, in this instance, the symbol and the sayings are, after all, only figurative. What connection the

matter has with Darwinism he will presently see. First let us hear Schopenhauer.

"We are accustomed," he says "to see poets chiefly occupied with the description of sexual love. It is, as a rule, the principal theme of all dramatic works; not less so of by far the greater portion of lyric, and equally so of epic poetry; not to speak of the piles of novels, which, in all civilised countries of Europe, crop up every year as regularly as the fruits of the soil. All these works are, as regards their main topic, nothing but many-sided, short or detailed, descriptions of the passion in question. Indeed, the most successful delineations thereof, such as Romeo and Juliet, the New Héloise, Werther's Sorrows, have attained undying fame. If Rochefoucauld is, notwithstanding, of opinion that with passionate love it is the same as with ghosts—everybody talks of it, but nobody has seen it; and if Lichtenberg disputes and denies the reality and naturalness of that passion, they are both greatly in error. For it is impossible that a subject alien to human nature should, at all times and indefatigably, be represented by the genius of the poet, and be received by mankind with unchanged sympathy, since without truth there can be no beauty in art. 'Rien n'est beau que le vrai, le vrai seul est aimable.' (Boileau.) No doubt, however, a wide, though not daily experience, confirms that what in general occurs only as a strong, yet still not indomitable inclination, may, under certain circumstances, grow into a passion surpassing every other in vehemence, and will then set aside every consideration, and surmount every obstacle, so that, for its gratification, life itself is unhesitatingly risked, nay, if such gratification be absolutely unattainable, even sacrificed. The Werthers and Jacopo Ortises do not exist in novels only; but every year produces at least half a dozen similar cases—*sed ignotus perierunt mortibus illi*—for their sufferings find no other chronicler but the coroner's clerk or a newspaper reporter. Still greater, however, is the number of those whom the same passion leads into the lunatic asylum. Lastly, every year produces a case or two of the joint suicide of a loving couple, whose union is prevented by circumstances. As to the lower degrees, and the mere touches of that passion, every one has them daily before his eyes, and, if he is not too old, mostly, too, in his heart. Neither the reality, then, nor the importance of the matter can be doubted, and hence,

instead of being surprised that a philosopher should, for once, make this constant theme of all poets his own, one ought to wonder at it that a matter which plays so important a part in human life should scarcely have been taken into consideration at all by the philosopher, and be still an unworked material. The one who has written most about it is Plato, especially in his *Symposium* and *Phædrus*; but what he says on the subject does not extend beyond the domain of myths, fables, and witticisms, and, for the most part, too, concerns only Greek boy-love (*παιδεραστία*). The little that Rousseau says on our theme, in his *Discours sur l'Inégalité*, is incorrect and insufficient Kant's discussion of the question, in the third section of the treatise on the Sense of the Beautiful and the Sublime, is very superficial, and without any real knowledge of the subject, therefore, partly too, incorrect. Spinoza's definition only excites hilarity by its exceeding naiveté. He says (Ethics iv, Prop. 44, Dem.), *amor est titillatio, concomitante idea causæ externæ.* I have, therefore, no predecessors either to draw upon or to refute."

All *sexual love*, then, however ethereal it may appear, has its sole root in *sexual instinct*, nay, is absolutely only a more definite, specialised, aye, in the strictest sense individualised, sexual instinct. If, bearing this in mind, we consider the important part which sexual love, in all its gradations and shades, plays not only in fiction, but in the real world, where, next to the love of life, it shows itself the strongest and most active of all motives or springs of action; constantly absorbing half the strength and thoughts of the younger portion of mankind; every hour interrupting the most serious occupations; sometimes, for a while, turning even the wisest heads; not fearing with its frivolity to disturb the negociations of statesmen and the investigations of scholars; contriving even to slip its billets doux and lovers' curls into ministerial portfolios and philosophical manuscripts; daily causing mischief; dissolving the dearest and firmest ties; making victims now of health or life, now of riches, rank and happiness; aye, making the honest unscrupulous and the faithful man a traitor; thus, on the whole, showing itself a spiteful demon, who is at pains to pervert, confound and overturn everything—if one considers all this, one cannot help asking, wherefore all this ado? wherefore all this stir and rage, this anxiety and misery? After all, there is nothing in it but that every one meets with his mate

—why should such a trifle be made so much of and incessantly interrupt and throw into confusion the course of well-ordered human life? But the spirit of truth gradually reveals the answer to the earnest inquirer. It is not a trifle that is at stake; on the contrary, the importance of the matter is quite in proportion to the earnestness and zeal displayed in its pursuit. The final aim of all love-intrigues, be they comic or tragic, is really of more importance than all other ends in human life, and hence, well worthy of the deep earnestness with which every one pursues it. What it all turns upon is nothing less than the *composition of the next generation. Not only the existence but the nature, constitution and outward features of those who are to appear on the stage after us are determined by these seemingly frivolous love-intrigues.* This is the key to the problem; we shall, in its application, become more fully acquainted with it by tracing the various degrees of love, from the most transient inclination up to the strongest passion, when we shall see that the difference of degrees originates in the degree of individualisation in the choice. All the love-intrigues of the present generation taken together are therefore its serious *meditatio compositionis generationis futuræ.* It is not the weal or woe of any one individual, but that *of the human race to come* which is here at stake. Inexplicable as is the special and exclusively peculiar individuality of each human being, the special and individual passion of two lovers is equally so, nay, at the root they are identical, the former being *explicite,* what the latter was *implicite.* Indeed, the moment in which the parents begin to love each other,—"to fancy each other," as the English admirably term it—may be regarded as the really first origin of a new being and the true *punctum saliens* of its life. This new individual is in a certain measure a new (Platonic) idea: now as all ideas strive with the greatest vehemence to realise themselves, eagerly seizing the matter which the law of causality distributes among them; so this special idea of a human individuality seeks its realisation with the greatest eagerness and vehemence. This eagerness and vehemence is represented by the desire of the future parents for each other. This desire has innumerable degrees, ranging between the two extremes, which may be designated as Αφροδίτη πανδημος and *οὐρανία*: in its nature, however, it is everywhere the same. In degree it will be strong in proportion as it is

individualised, *i.e.*, according to the degree in which the beloved individual, by virtue of its composition and qualities, is exclusively qualified to satisfy the lover's wishes and that want of his which is determined by his own individuality. What this depends on we shall presently see.

In the first instance and essentially the amorous inclination is directed towards health, vigour and beauty, consequently towards youth, because the will primarily desires to preserve the general character of the human species as the basis of all individuality. Every-day love does not go much beyond these requirements; to them are next added more special ones, which we shall presently point out in detail, and with which, where satisfaction is expected, the passion increases. But the highest degrees thereof arise from that adaptation of the two individualities to each other, by virtue of which the will, in the character of the father and the intellect of the mother, in their conjunction, may produce that individual, according to which the will to live in the abstract, as realised in the whole species, feels a desire, proportionate to its intensity, and therefore as much surpassing the bounds of a mortal heart as the motives of such desire lie beyond the sphere of the individual. This, then, is the soul of really great passion. Now the more perfect is the mutual adaptation of two individuals to each other in the various respects hereafter to be examined the stronger will be their passion. There not being two wholly equal individuals, there must be for every man some woman most perfectly corresponding to him, always understood with respect to that which is to be produced. The chance of their meeting in life, however, is as rare as real, passionate love is. But, meanwhile, the possibility of the latter existing in every individual, renders its delineation in works of fiction intelligible to us.

And now for a more thorough examination of the matter. Egotism is so deep rooted a quality of any and every individuality, that selfish objects are the only ones safely to be relied on, if one wishes to rouse an individual to action. It is true, the race has a prior, nearer and greater right to the individual than decaying individuality has; nevertheless if the individual is to exist himself and even to make sacrifices for the continuance of the race, the importance of the matter cannot be rendered so comprehensible to his intellect, which is always bent only on

individual objects, as to act according to that importance. Hence, nature, in such a case, can attain her end only by implanting within the individual a certain illusion, by means of which he fancies good for himself what in truth is so only for the race. This illusion is the instinct. This is, in by far the most numerous instances, to be looked upon as the *sense of the race,* which represents to the will what benefits the race. But the will, having here become individualised, has to be deluded in such a manner as to perceive by the sense of the individual what the sense of the race holds out to it, thus fancying itself pursuing an individual end, while, in truth, it is pursuing *general* ends, the adjective being here taken in its primary sense. As for the external appearance of instinct, we best observe it in animals, in which it plays the most important part; but as to its internal process we can only, as in every similar case, come to know it from ourselves. Now, it is generally thought, man has scarcely any instinct, or, at most, in so far as the new-born babe seeks and seizes hold of its mother's breast. But, in fact, we have a very definite, distinct, nay, complicated, instinct, expressed in the nice, serious, and most fastidious *selection* of the other individual for our sexual gratification. With this gratification in itself—*i.e.*, in so far as it is a sensual enjoyment resting on the urgent craving of the individual—the beauty or plainness of the other individual has nothing to do. The regard, notwithstanding, so assiduously paid to these, together with the careful selection springing therefrom, has, then, manifestly no reference to him who selects, though he fancies it is so, but to the true object, to the *being* to be produced, so that in it the type of the race may be preserved as pure and faultless as possible. The fact is, thousands of physical accidents and moral obstacles cause a variety of degeneracies in the human figure; nevertheless, its true type, in all its parts, is constantly being restored, thanks to the guidance of the sense of beauty, which, in the average, is the principal incitement to sexual desire, and without which the latter is degraded into a loathsome craving. Accordingly every man will, in the first instance, give the preference to, and eagerly covet, the possession of the handsomest individuals—*i.e.* such as have the type of the race expressed in them in its greatest purity; but next he will particularly seek in the other individual for those perfections which he lacks himself—nay

will even find those imperfections handsome which are the opposite of his own. Hence, short men will select tall women, the fair love the dark, and so forth. The giddy rapture which seizes a man at the sight of a woman, of a beauty adapted to him, and deluding him with the idea that a union with her would be the highest good, is nothing but the *sense of the race*, which, recognising its clearly expressed type, desires to perpetuate it by means of that individual."

Passing over some deductions with regard to the instinct of animals, which here finds its explanation, and omitting some remarks on the deception practised upon the individual by the delusion referred to, which remarks conclude with an apt quotation from Plato, who, in his *Philebus* (p. 309), says *ἡδονη ἁπαντων ἀλαζονεστατον* (*voluptas omnium maxime vaniloquor*), I proceed to our author's closer analysis of the principle of selection indicated above.

"The first consideration", he says, "that guides our selection and inclination is *age*. Here the preference is decidedly given to the period from eighteen to twenty-eight years. A woman past bearing can no longer charm, but, on the contrary, disgusts us in sexual respects. Youth without beauty has still some attraction; beauty without youth none. Obviously, the intention unconsciously guiding us is the possibility of procreation in general; hence every individual loses his or her charm for the opposite sex in proportion as he or she is remote from the period fit for procreation or conception. The second consideration is that of *health*; acute diseases are but a temporary interference; chronic complaints, or, worse than these, a cachectic condition of body, repel, because they affect the offspring. The third consideration is the osseous frame, that being the basis of the type of the race. Next to age and disease, nothing is more repulsive than deformity; even the handsomest countenance cannot compensate for it; on the contrary, the plainest face with straight figure is preferred. Again, every disproportion of the figure or limbs strongly offends us; so does lameness, too, unless the consequence of some accident. On the other hand, a strikingly handsome figure can make up for many other defects: it enchants us. To this may be added the high value all attach to the smallness of the foot; the reason is, its being an essential feature of the race; indeed, *tarsus* and *metatarsus*, taken together,

are smaller in man than in any animal, which is connected with his upright gait. The teeth, too, are of moment, being essential for the assimilation of food, and their quality being especially hereditary. The fourth consideration is a certain abundance of flesh, or a predominance of the vegetative function, promising, as this does, copious nourishment for the fœtus; great leanness, therefore, repels. For the same reason, a full bosom is uncommonly attractive; excessive fatness, however, excites disgust, because instinct, not our mind, tells us it indicates sterility. The last consideration (though the first attraction) is beauty of countenance. Here, too, the osseous parts are the primary regard; hence the importance of a well-shaped nose. A slight curve of this organ, downwards or upwards, has decided the fate of innumerable females, and justly so, for the type of the race was at stake. A small mouth, too, caused by small maxillæ, is very essential, being a special feature of the human countenance, as contradistinguished from the muzzle of brutes. A receding chin is particularly offensive, because *mentum prominulum* is an exclusively characteristic feature of our species. Last of all comes the regard to the beauty of the eyes and forehead; these being connected with the mental qualities which are inherited from the mother.

"As to the unconscious considerations which determine the inclination of woman, we cannot, of course, state them with equal accuracy. On the whole, the following may be affirmed. They give the preference to the age from thirty to thirty-five, because instinct tells them that these are the years of the highest generative power in man. In general, they care little for beauty, least of all for a handsome countenance. What chiefly attracts them is vigour, and the courage arising therefrom; for these qualities promise vigorous progeny, and, at the same time, a valiant protector for them. The woman can, with respect to the offspring, neutralise every physical defect of the man, every deviation from the type, by being herself without blemish in the same points, or perhaps having an excess in the opposite direction. Excepted therefrom are only the qualities of the man peculiar to his sex, and which, therefore, the mother cannot give the child, such as the masculine build, broad shoulders, narrow hips, straight legs, muscular strength, courage, beard, etc. Hence it is

that women often love an ugly man, but never an unmanly one, because they cannot neutralise his defects."

Again passing over a passage containing an analysis of the mental qualities which form the second class of considerations in sexual love, and which, with the physical ones previously enumerated, constitute the sum of the absolute considerations, or such as refer to all human beings alike, I shall next give a few extracts from the paragraph treating of the relative considerations having reference only to individuals. "Here the intention is to rectify defects, and to lead to a pure representation of the type. Every individual, therefore, loves what he is lacking in. Proceeding from individual constitution, and directed towards such, the choice based on such *relative* considerations is much more definite, decided, and exclusive than that proceeding from the absolute ones: hence a really passionate love will, as a rule, originate in the former, and only the ordinary, slighter inclinations in the latter. Accordingly it is, in general, not exactly the regular and perfect beauties that kindle the great passions. For such a really ardent affection to arise something is required that is only to be expressed by a chemical metaphor —*i.e.*, the two individuals must neutralise each other, even as an acid and a basis turn into a neutral salt.... There is something quite peculiar in the deep, unconscious earnestness with which two young people of opposite sexes, that meet for the first time, regard each other; how searching is their glance, how careful the review all their features and members have mutually to pass. This examination is *the meditation of the Genius of the Race* on the individual possible to spring from them, and on the combination of its qualities. The result determines the degree of their liking and craving for each other. On a subsequent discovery of something that had at first remained unperceived, the passion, even after having already attained a considerable degree, may suddenly be quenched again. In all, then, that are capable of procreation, the Genius of the Race meditates the coming generation. Its constitution is the great work with which Cupid, unremittingly active, speculating and musing, is occupied. Compared with the importance of his great affairs, concerning, as they do, the race and all coming generations, the affairs of individuals, in all their ephemeral totality, are trifling indeed; hence, too, he is ever prepared regardlessly to sacrifice these.

For he bears to them the relation of an immortal being to mortals, and his concerns are to theirs even as the Infinite to the Finite. In the consciousness, then, of administering affairs of a higher nature than all such as concern only individual weal or woe, he pursues them with lofty unconcern, amidst the tumult of war, or the bustle of business-life, or amidst the raging pestilence, aye, even in the seclusion of the convent."

Having thus given an abstract of Schopenhauer's theory, I believe my purpose here will be fulfilled, and, after referring the reader for further particulars to the work itself, where he will find all the objections that may have suggested themselves to him in the perusal fully and fairly met and removed, I now proceed to the second part of my business, which is to show the connection between that theory and Darwinism. But here I can be brief. Or has that connection not already revealed itself to my readers in perusing the foregoing? Has it not become manifest to them that here we have Darwin's theory of "the origin of species by natural selection" brought to bear upon our own race, and carried out to its full length? What Schopenhauer called "the *metaphysics* of sexual love", he might, had he been acquainted with Darwin's theory, have designated by the opposite name, for his own speculations are now proved to be well grounded, and to have a thoroughly *physical*, or quite natural basis. Unfortunately, Darwin's work was published too late in life for Schopenhauer to read it. At least, I presume such must have been the case. The first edition appeared in 1859, I believe, and Schopenhauer died in 1860. Though he read every work connected with his philosophy, Darwin's book cannot have reached him before his death, else he would certainly have mentioned the fact in his letters to me, as the support which his theory obtained by Darwin's could not have escaped him, ever on the alert as he was for facts and doctrines affording such support. This is plainly shown in his *Will in Nature*, where he goes through all the sciences, and records even their latest discoveries, in so far as they bear upon the principle of his system, as expressed in the title. Has Mr. Darwin ever read Schopenhauer? That, of course, is a question I am wholly unable to answer; but he is fortunately living among us still, and may, perhaps, should the question have to be answered in the negative, be induced by this article to look into the works

of a philosopher who has so wonderfully anticipated his theory, and has taught deductively what Darwin has proved inductively. I myself was only engaged in the study of Darwin's work when the tidings of Schopenhauer's decease reached me, and thus, even had I then discovered the analogy between the two theories, all discussion with Schopenhauer on the subject was sadly and suddenly cut off. But, to own the truth, that analogy struck me only lately; it flashed upon me all at once; and a maturer consideration of the matter, combined with a reperusal of both authors, only confirmed what a momentary inspiration had suggested. Of course, I may presume, or even take for granted, that all my readers have read Darwin; nevertheless, by way of refreshing their memories, I will quote the few passages more immediately bearing upon my theme, though, in truth, the whole work does so. In his speculations, Darwin seems purposely to stop short of man;* but, surely, no one who has read him attentively will for a moment deny that the theory applies to the human species as well, and that the author furnished premises only, as it were, from which to draw our own inferences. Nay, he cannot even be said to make a secret of the real extent to which he would have his principle applied, seeing that he expresses the hope it may "give a new basis to psychology; viz., that of the necessary acquirement of each mental power and capacity by gradation." But to my quotations. That he supports Schopenhauer in the leading principle of his theory may be seen in the following passage: "A kind of selection, which may be called unconscious, and which results from every one trying to possess and breed from the best individual animals, is more important" (than methodical selection). Again, under the heading of "Unconscious Selection", we read: "By a similar process of selection, and by a careful training, the whole body of English racehorses have come to surpass in fleetness and size the parent Arab stock, so that the latter are favoured in the weight they carry."† And now let us hear the passage occurring in the work on Sexual Selection, which I do not adduce here as a clincher, for such is not required, but simply as being the one passage bearing more closely than any

* A work by Mr. Darwin, applying his theory to man, is now in the press.—Ed.

† *Origin of Species*, 4th ed., p. 37.

other upon the topic here treated. "Thus it is," says Darwin (p. 100), "as I believe, that when the males and females of any animal have the same general habits of life, but differ in structure, colour, or ornament, such differences have been mainly caused by sexual selection; that is, individual males have had, in successive generations, some slight advantage over other males, in their weapons, means of defence, or charms, and have transmitted these advantages in their male offspring." Real love, then, in man and woman is what Schopenhauer has defined it to be; viz., the law of natural selection implanted within us for the purpose of preserving the type of the human race in its greatest perfection; it is the instinct of the race or genus that prompts us to covet that particular woman for ourselves, deluding us with the idea of thereby gratifying our own individual desires, but, in reality, benefiting the race to which we belong. Darwin's speculations, based on the inductive method, have now corroborated the deductive theory of Schopenhauer's, and I leave it to the thinking reader to draw his own inferences from the teachings of both the metaphysician and the natural philosopher. It has been justly remarked that, however doubtful may be the progress of mankind in morality, there certainly is an undeniable progress in our consciousness, or knowledge. The light thrown on sexual love by these speculations is undoubtedly a contribution to such progress; if they have a tendency to render prosaic what has hitherto been the staple theme of all poetry, I can only say, Truth above all things, and our most cherished ideas must be sacrificed at her shrine. She is a jealous goddess, and will not allow a second deity to be worshipped by the side of her. Nevertheless, there is no cause for fear; for the world-at-large love will still remain what it has been, will still be sung by the poet and treated by the novelist, and, what is of more importance, will still rule the hearts of the young, and exercise its soft influence even on those of maturer age; will still continue the flower of life; and he who is under its bewitching sway will still, with Antony, exclaim,

> "Let Rome in Tyber melt! and the wide arch
> Of the ranged empire fall! Here is my space,
> Kingdoms are clay: our dungy earth alike
> Feeds beast as man: the nobleness of life
> Is, to do thus; when such a mutual pair,

And such a twain, can do 't, in which I bind,
On pain of punishment, the world to meet;
We stand up peerless."

DR. DAVID ASHER.

Leipsic, May 1870.

NOTE.—Since writing the above, I gather, from a review of F. Galton's work on *Hereditary Genius; an Enquiry into its Laws and Consequences*, that the author has also referred to Darwin in support of his hypothesis. I hope this statement may suffice to save me from the imputation of plagiarism. At the same time, I am glad to find the deductions from the theory propounded by Schopenhauer, and presented in the preceding article, have been drawn by so able a hand.

ART. IX.—THE LIFE OF DR. KNOX.*

To attempt to review Dr. Lonsdale's work will be a difficult task. A biography of a most eminent English anthropologist, who passed away immediately before the foundation of the London Society, has, after the lapse of seven years, been successfully accomplished by the pupil and colleague of Dr. Knox—Dr. Lonsdale. He has done this well. Not imbued with the prejudices which still lurk in the minds of some English anthropologists and anatomical teachers against the morality of Knox, and in relation to his alleged connection with the Burke and Hare murders, he has told us, and told us well, what Knox was, what Knox thought, and what Knox did. He was, perhaps, the most simple-minded and thorough teacher of anatomy that the Edinburgh school ever produced; and in the sentences which he published we have a more thorough idea of future anthropological science than at present exists in England. What he did was perhaps bold—it certainly was truthful. He thought of the old maxim, "Senhores ricos, e filósofos pobres, nao pódem fazer cousas grandes, porque a estes lhes falta dinheiro, e aquelles espirito." He was, however, not too rich to be truthful, nor too poor to be

* *The Life of Robert Knox, the Anatomist.* A Sketch of his Life and Writings, by his Pupil and Colleague, Henry Lonsdale. With portraits. Macmillan and Co., London.

a philosopher. In fact, when we look at the latter years of Knox, we can apply to him the words of Swift, whose mocking antinomian denunciation of the surrounding world forcibly reminds us of Knox:—"It was bitterness that they mistook for frolic. I was miserably poor, and I thought to fight my way by my literature and my wit, so I disregarded all power and all authority." Why, he even laughed at the editors of our popular manuals of physiology, and his laughter was long afterwards approved by the unanimous vote of the Edinburgh Town Council, at the time of the famous election for the chair of physiology at that city.

Whether Knox's plan of always saying the truth without reference to the feeling or prepossessions of his auditory was absolutely the best, we do not know. It certainly was not lucrative; and it brought him enemies during his lifetime,

> "Das Beste, was du wissen kannst
> Darfst du den Buben doch nicht sagen."

Knox had an unfortunate habit of letting out all he thought to his students; a habit we cannot commend to all those who prefer the profits to the verities of science. And we see in his outspoken utterances the real motives which have actuated so many of our most profound anthropologists. Bunsen says, "Even the greatest men reveal, in the deepest outpourings of their hearts, their frightful despair of humanity." The sad events which marked much of Dr. Knox's life have not invalidated the triumphant words with which Dr. Lonsdale pronounces, "General consent has awarded Knox an exalted platform as an anatomist, and he was undoubtedly the first teacher of his day, but posterity will probably figure him as the chief anthropologist of his epoch, a pioneer of a philosophy that sought to recognise the true nature of man, his instincts, his passions, his psychological leanings, and social influences." The number of great English minds that owe their first scientific *impetus* to Knox's influence and personal teaching are enormous. We, as anthropologists, while we recognise the greatness of such men as Fergusson, the Goodsirs, and J. H. Bennett, must gaze at the eminent anthrological authorities whom Knox taught. Richard Owen—*αριστον ων οιδα εγω φιλοσοφων γενομενον*; Nott and Gliddon; the late lamented Dr. Hunt; Robert Druitt; Professor W. Macdonald; H. Lonsdale; Kelburne King, are instances which immediately

occur to one. Although the present writer dares not to associate himself with the before cited illustrious teachers, yet his mind goes back to the time when Knox by letter could applaud "an earnestness and love of science *for its own sake*, a sure pledge that science will not be suffered to remain stationary in your hands." He who feels towards Knox the sentiments of personal gratitude, which have led to this quotation, may be excused if at the risk of egotism, he says a little of what he personally knew of the great master, who departed to another existence on the 20th December, 1862, the very week when a few zealous anthropologists, under the command of Hunt, were meditating the foundation of the Society which has since become so influential and famous. And when we contemplate the science then and now, we feel the greatness of our losses.

To attempt to abstract the life of Knox, to attempt to excerpt from his numerous printed teachings aught that could form a categorical history of the successive facts that he brought to the notice of the English public, would be impossible in our present space. We can only point to a few of the great services he rendered science. At the period of his teaching much baleful influence was cast over English science by eight unwieldy and dull volumes, that Knox used to be fond of calling the "Bilgewater Treatises." It is probable that the doctrines and facts of Knox have produced that verdict on the ultra-teleological school which was pronounced twenty years ago, and is now almost forgotten. If this was all he did it would have been a great thing. But something more was done by him. He revolutionised altogether our study of the races of man. Many, since the time of Blumenbach, had recognised the difference between the skulls of men of various races, but none had pointed out that the inherent mental distinctions in the dress, music, manners of thought of various nations, were due to race. The only remedy for it is the extirpation of the weaker race. We fear that present events bear out entirely the predictions to which Knox gave utterance. "No one could converse with Knox without recognising the great space that man's nature filled in the schedule of the anatomist's philosophy. Race would set aside geographical position and boundaries, protocols, autocracies, and the like; it overtopped restraints of every kind, diplomatic or dynastical. Knox could not glance at a cranium for the common descriptive

anatomy without speaking of its ethnological bearings; it was the same with the external features and form of man generally and specifically. However much he might owe to study and acquirements, Knox seemed to the manner born to investigate distinctive anatomical characters; even when walking along the streets thronged with men and women, he was always on the *qui vive* for race features. He could see at a glance what ordinary men could scarcely distinguish at their leisure; if his eye was penetrative beyond most, his more gifted vision lay within an alert and discriminative mind. Previous to his time little or nothing was heard about race in the medical schools; he changed all this by his Saturday's lectures, and race became as familiar as household words to his students, through whom some of his novel ideas became disseminated far and wide, both at home and abroad. The terms 'peoples', 'nationalities', and the like, used to constitute the staple vocabulary of writers, without, however, any tangible groundwork or ideal perception of the larger truths involved. Knox, travelling like a peripatetic from one great city to another, helped to convey to the English mind a larger meaning than hitherto existed of the history of peoples; and this he accomplished by holding up a mirror that reflected not only the names and colours of humanity, but the inherent virtues and vices—call them the distinctive qualities of race." Yet, seven years after the death of Knox, we have an eminent German professor, distinguished for ability and generally profound knowledge on many subjects, writing to the *Times* to tell Englishmen that they are of the same race as the Germans! And where Max Müller has erred, many lesser men have more deeply floundered. These facts show that Knox's philosophy is not yet universally taught, and indicates the necessity that chairs of Anthropology should be founded at our Universities to teach the next generation, at least. "Men are of various races; call them species, if you will; call them permanent varieties, it matters not. The fact, the simple fact, remains just as it was; men are of different races. Now, the object of these lectures is to show that in human history race is everything." So said Knox in 1850. His description of the Celt and the Saxon will live for ever. We dare not here quote it at length. It has been often misquoted, garbled, and diluted, and the subject just now becomes so political that

we must say *non ragionam di lor, ma guarda e passa.* The principles which Knox laid down were applied by him to the Jewish race, and we must commend all Knox's generalisations respecting the Jews to the attention of the present generation of anthropologists. With Dr. Beddoe's valuable little pamphlet, they form the groundwork on which we hope that some future anthropologist will base a reliable memoir on the physical, moral, and mental history of the Jews. Future generations, however, may, perhaps, not enjoy the advantage of such an artist to depict the Jew as Dr. Westmacott, whose beautiful contours of the Jew of various social types will always be of the highest anthropological value. Dr. Lonsdale, however, well points out that the Jews of the East were unknown to Dr. Knox, and he calls attention to the Jews of Constantinople, and of Syria and Rome, as types far superior to those Northern European forms with which Knox was most familiar. Our own experience, both in Morocco and Southern Spain, teaches us that Portuguese and Spanish Jews are of a far higher and more intellectual type than the English and German Jews whom Knox chiefly describes. The thorough history of the Jewish race is, indeed, a subject carefully to be worked up from a dispassionate Aryan point of view.

"Dr. R. Druitt read some passages of Knox's work to the late Lord Lyndhurst, whose 'aliens in blood, in language, and religion' speech to the House of Lords had been severely handled by the O'Connellite party and the press. In Knox's description of the Celt, the ex-Lord Chancellor found consolation to his wounded feelings. Both Lord and Lady Lyndhurst wished their estimable medical friend, Dr. Druitt, to express to Dr. Knox the delight they had in perusing the *Races of Men,* and their wish to see the work freely circulated in the best English society." It is really significant that at the time of O'Connell's efforts to obtain "Repeal", a more true appreciation of the difference between Celt and Saxon should have been shown by an English Celt, like Lord Lyndhurst, than by an Irish Celt. O'Connell, whose Celtic sympathies were so prominently developed, actually did not perceive that the Celt and the Saxon were radically different, and that even the laws of morality were diverse in the two races.

The greatest political event of the last ten years prior to the

present war, has been undoubtedly the breaking up of that synthesis which used to be the Austrian Empire. That Italians, Hungarians, Saxons, and Slaves, could form a compact autonomy was, in the eyes of Knox, an impossibility. And the opinions which in 1846 he uttered have since been corroborated on other than anthropological grounds. We now see that race governs the disposition of events in Western Europe, as well as in the South-east. Race may shortly indicate the great contrast between the dolichocephalic Swede and brachycephalic Teuton. A little caricature-map, "dressée par Hadol," now being sold at our street-corners, perhaps indicates a profounder appreciation of the anthropology of the future than popular writers on the daily press may care now to admit. "La Suède fait des bonds de panthère". The Slavonic races also are moving westwards, possibly to regain that linguistic pre-eminence which the researches of Dr. Latham have taught us they once possessed in Germany.

"If Defoe, in his wrath against the Stuarts, said that Englishmen were the mud of races, Knox hesitated not in his leisure to call them a mongrel crew." So says Dr. Lonsdale; and there is, doubtless, truth contained in Knox's somewhat uncouth expression.

The last time Dr. Knox spoke in public was on July 1st, 1862, at the meeting of the Ethnological Society. A discussion had arisen on a paper on Human Remains from Muskham and Heathery Burn, by Mr. Mackie. The skull from Muskham, since figured by Professor Huxley in 1866, presented some peculiar characters in which it was considered by Mr. Mackie to have some slight simian affinity. The present writer having spoken at great length on the subject, Dr. Knox rose, and, with a gesture of eloquence, entirely put right the whole matter, and corrected the errors into which both Mr. Mackie and myself had been led. The manner in which the great old man then spoke will never be forgotten by those who heard him. Though the chief actors of that evening—Crawfurd, Hunt, and Knox—have passed away, yet the remembrance of the last occasion on which Knox spoke will be an eternal *souvenir*. He was, by his teaching, the last almost of a great school of anatomists which has nearly passed away. It will be difficult to find in succeeding generations his equal as an anthropologist, an anatomist, or as a teacher. Those who had the pleasure of knowing him can appreciate the

feeling of loyal reverence with which Dr. Lonsdale, never blind to Knox's faults, represents his character in a light which is logically and historically accurate. Few scientific men have ever possessed a biographer so elegant or so exact.

C. CARTER BLAKE.

ART. X.—AFFINITIES OF THE OLD ITALIANS.*

ONE would have thought we had had enough of works to prove that the Latin and Greek languages are principally based upon Celtic, a dogma only equalled in absurdity by that of Jäkel, who traced the Latin language to the German. Mr. Stratton does not embrace the whole of the Celtic dialects. He goes no further than the Gaelic, and his work is chiefly composed of vocabularies. In these, a large portion of the words might well have been omitted, either because the meaning of such words is different, or because they are not etymologically connected at all; *e.g.*, *eo* and *bao*, to go, which are respectively compared with Gaelic *uidhe*, a way; *flo*, to blow, with *aile*, air; *sagino*, to make fat, with *sac*, a sack. The only use of the remaining words in the vocabularies is to prove the reverse of the theory advocated; viz., that the Gaelic, like the other Celtic dialects, is to a great extent based upon Greek and Latin. This is shown by the fact, that many words of which no etymology can be found in the Celtic languages, may, when referred to the Latin and Greek, be analysed or traced historically: thus the Gaelic *buchaill*, a cowherd, shepherd, comes from βους and κολον; *bean* (Welsh, *benyw*), a woman, from *femina*, from an obsolete *feo; cathair*, a fortified city, chair, seat, from καθεδρα, from κατα and εδρα; *cairt*, a cart, from Lat. *carrus* (*cour*, court, from *curia*). It would be absurd to suppose that στρουθος, an

* *The Celtic Origin of the Greek and Latin Languages.* By Thos. Stratton. Edinburgh: Maclachlan and Stewart. 1870.

2. *Lectures introductory to a History of the Latin Language and Literature.* By John Wordsworth, M.A. Oxford: James Parker and Co. 1870.

3. *The Asiatic Affinities of the Old Italians.* By Robert Ellis, B.D. London: Trübner and Co. 1870.

ostrich, is derived from the Gaelic *struthan*. The primary meaning of the Greek word proves the reverse.

Mr. Stratton tells us it was formerly asserted the Latin was merely a dialect of the Greek, but that only a small part of the former can be referred to a Hellenic source. The author of the paper has not proved this; neither is it true, and, notwithstanding all that has been stated to the contrary, we have no hesitation in saying, that at least one-half of the words in the Latin language are derived from the Greek. This can be proved in the way already pointed out for tracing the Celtic languages to the Greek and Latin.

The object of the lectures contained in Mr. Wordsworth's pamphlet is, as its title imports, to furnish an introduction to a History of the Latin Language and Literature. The subjects of the lectures are: "The Place of Rome in Aryan Civilisation"; "The Latin Race in Italy"; and "The Elementary Age of Latin Literature". From M. Pictet's well-known work, Mr. Wordsworth gives a description of the condition of the so-called Aryan tribes, before the dispersion from their assumed primitive home in the temperate region, "lying between the Aralo-Caspian Sea and the great mountain chain to the north of the Punjaub." That some primitive race lived in this region, to whom M. Pictet's description applies, is probable; but that they were Aryans there is really no evidence. From the existence among some of the peoples descended from this primitive race of the tradition of a deluge, it has been supposed that such a catastrophe led to its early migrations. The Western tribes settled down to agricultural life, while the Eastern tribes retained their more primitive pastoral state. They had probably some knowledge of navigation on the Aralo-Caspian Sea, and in this they appear to have been guided by the Great Bear, a constellation to which they are supposed to have given its name. [It should be noted, however, that the same appellation is applied to this constellation by some of the North American tribes.] Their acquaintance with astronomy was slight, and during an eclipse of the moon they endeavoured with drums and trumpets to drive away the demon that was devouring it.

Mr. Wordsworth sums up the general characteristics of the early Aryans by saying that in them we always see "the great principles of respect for law and order joined with political and

intellectual freedom; the seeds of those powers of creation, assimilation, and expansion, which have always distinguished their posterity. The great prerogative of the Aryan race has been the culture of the human mind, the development of thought, whether directed to God, or nature, or to the concerns of mankind." How far this judgment is correct is doubtful, when we consider the high degree of culture attained by the Chaldeans and other peoples of antiquity, whose decay had already begun while the so-called Aryan peoples were yet in their infancy; unless, indeed, as French scholars are fond of repeating, the Chaldeans themselves were derived from the Aryan stock. It is rather hazardous, too, in the present state of inquiry, to affirm that "the revolutions effected by Zoroaster and Buddha are entirely Aryan in origin"; and hardly less so to assert that "by means of Aryan and Semitic agents all the great religious and philosophical movements in the world have been produced." These may have been allowable propositions at one time, but the light which has within the last few years been thrown on primitive civilisation shows that such propositions now require considerable modification.

The Milky Way has been the subject of a common myth. "It was called," says Mr. Wordsworth, "the Way of the Dead, or of the Birds (*i. e.*, human souls), and the Way of Aryaman, 'The Friend', God of the Blessed. This Aryaman is, probably, the Teutonic Irman or Irmin; and, from the northerly direction of his Way or Road, our forefathers seem to have named the great Roman North Road, the Irmin Street." The last statement is pure imagination. Neither does there appear to be any connection between the two names; *Aryaman* being a Zend compound, whereas *Irman* or *Irmin* is a German compound, and of a totally different meaning. In connection with the title "Milky Way", we may observe that the *Gosh-Yasht* of the Zend-Avesta is addressed to the Milky Way personified as a feminine genius. The word *Gosh* means "cow", referring, according to Dr. Haug, to "the universal soul by which all living beings of the good creation are animated."*

Mr. Wordsworth asserts that "it is the glory of the Western, or progressive, Aryans, that to their care, almost since its birth, the development of Christianity has been committed." This is

* *Essays on the Sacred Language, etc., of the Parsees.* 1862. P. 182.

equivalent to saying, that Christianity, as known to us, is the product of Western thought; and it is in relation to the element of Christianity which the "progressive Aryans" possess in common that Mr. Wordsworth compares them. This comparison is chiefly taken from Mr. Maine, and, therefore, we prefer to give our author's own estimate of the character of the Romans. The distinctive mental features of this people, he says, were "their strength and gravity; their self-denial; their pride in national and family tradition; their combination of religion with their political life; the order and economy of their households; and the serious recognition of all public and internal duties." Again, "the object of their culture was to fit man for a particular place in the state, and that a state where theory was carried rigidly into practice. The Fortune or Fate of Rome was really the great deity of her people, not a representative of their wills and aspirations. To carry out the destinies of the city, not to mould them, was the ideal duty of every Roman. Add to this, the inheritance of a fixed place in a family, a genus, and an order, and the duties, sacrifices, and rights, that accompanied it, and we may have an idea of the repression of individuality which was exercised upon the ancient Romans. We shall also be prepared for their regard for history, and for their success in the making and administration of law. But they had also a power of assimilation, and of using the inventions and gifts of other nations. From the earliest times they knew how to incorporate alien elements of population or culture. They were, in the words of Pliny, *omnium utilitatum rapacissimi.* In this respect, the Romans bear analogy to the Celts, who are very susceptible of foreign culture, and whose languages are 'remarkable for their power of appropriating foreign elements.'" Mr. Wordsworth accounts for the facility with which Britain, Gaul, and Spain, were Romanised, by supposing the Celts to be more nearly allied to the Latins than to other Europeans. This is hardly compatible, however, with the undoubted fact that, except in language and institutions, the French and the other Celtic peoples have much more in common with the Greeks than with the Romans.

Mr. Wordsworth suspends his judgment on the actual relation between the Celtic and the Latin languages. He says we must "allow a large element in Latin, which is foreign to Greek,

and may be akin to Celtic"; and he adds that there must at all events have been a very early contact between the two peoples.

After referring to several minor peoples of the Italian peninsula, Mr. Wordsworth turns to the Etruscans, considering first the names borne by them as a people. Of these, *Raséna*, the name by which they called themselves, "is only found in Dionysius; but we need not doubt that it was really used by the people. The conjecture of Niebuhr, that this name represents the conquering race, or mountain people from Rhaetia, has much to recommend it. They will then have been related to the subject races, just as the Magyars to the Hungarians, and the Normans to the Saxons. Dr. Donaldson supports this view by an explanation of the name *Ras* as =*Ros*, 'the runners', and refers to the similar aristocratic name 'Celeres' at Rome. He believes the Ras or Raséna to have been a Scandinavian or Low German people, and on this hypothesis explains various difficulties in the Etruscan language. He would also derive the name *Et-rur-ia*, or *Et-rus-ia*, from the same root."

Assuming that the Etruscans were of Asiatic origin—an opinion which is said to be supported by the character of their art remains—we think a much better etymology might be found for the name Raséna. Bochart mentions a place named Ρισινα. Ραισενα was the name of two cities of Mesopotamia, and Resen was the appellation of a very ancient city between Nineveh and Calach in Assyria. For our part, however, we think it more probable that Raséna is a corruption of *Tyrsene* for *Tyrrhene*. It must, however, be admitted that the Etrusci called themselves Raséna, and that they were only called by others Etrusci and Tyrrheni. Mr. Wordsworth's own opinion as to the race-affinity of the Etruscans is that "the most important part of them were of the Aryan race, and probably of the Pelasgian stock, with more of Asiatic qualities than the Greeks or Latins had." How far this conclusion agrees with the latest anthropological researches, may be seen by reference to the important memoir of Professor G. Nicolucci, who inclines to refer the Etruscans to a Semitic source.*

Mr. Wordsworth refers, in this connection, to certain local names of apparently Celtic origin; among others, those of the *Umbrians* and *Ambrones*, and of the river *Umbro*, and to the

* Conf. *Journ. of Anth.*, No. 1, p. 79.

fact that the Umbrians are represented by ancient authors as the aborigines of Italy, and by some of them as of Gaulish origin, all of which would lead us to conclude the settlement of a Celtic race in Umbria.

The principal object of the work on the *Asiatic Affinities of the Old Italians* is to prove that the Etruscan language is derived from the Armenian, which latter language is supposed to have been carried by the Thracians from the Caspian to the Alps and the Tyrrhenian Sea. The work is ingenious, but not altogether satisfactory. There is nothing impossible in the supposition that there was some connection between the Etruscans and the Armenians; but we think that affinities with the former might, if necessary, have been found nearer home. The index of Etruscan words is considerably fuller than the vocabularies of Donaldson and Newman, although some words they contain have been omitted, whilst others might have been added from Fabretti, which are not found in any of these vocabularies. A critical examination of the words given by Fabretti leads us to think that many of them are derived from a Greek source, and that others are connected with Teutonic, Celtic, and Phœnician. Mr. Ellis's work is almost wholly etymological, and we must say we do not think much of his critical power in this respect. His comparison of the Etruscan numerals is very faulty. These he connects with the Aryan and Caucasian numerals, whereas they are much more nearly allied to the Semitic, with which Mr. Ellis does not compare them. Take, for instance, the Etruscan *zal* (three). This is related to the Hebrew *sel-sah* (three), although, probably, a second Etruscan form, *thr-*, is connected with the Zend *thraio* (Sansk., *traya*). So also the Etruscan *huth* (four), which may, as Mr. Ellis supposes, be somehow connected with the Georgian *khuthi* (five), is evidently related to Semitic forms. Thus, the Amharic has *arrut* (four), in the Semien dialect, *harat*, which in Kaffa becomes *haudda*. The queried second Etruscan form of this numeral, *kar-*, confirms this derivation. Again, the Etruscan *ki* or *kiem* (five), may be connected with the Hebrew *khamisan* (five), in Syriac *khamso;* and the Etruscan *sa, sas* (six), would seem to be related to the Hebrew *sisah*, in Tuarik *sesot*. This numeral, as well as the Etruscan *be(m)ph* (seven) had, doubtless, Aryan analogues, but it is more nearly connected with the Semitic. Conf. the Hebrew

sibeah (seven), the Syriac *sabao*, the Tuarik *seba*. We have not space to follow further Mr. Ellis's etymological analysis of the Etruscan language. In conclusion, however, we would refer to certain philological reasons which he gives in order to prove that at one time the people now found in the Caucasus spread throughout the whole of Southern Europe. Our author says: "The name of the *Orobii*, who occupied the mountains of Como, and possessed *Berg-omum* (which is like *Perg-amus*, and may contain a termination like the Tuschi *-om*, and that of the Lycian *ὕλ-αμος*); of the river *Orobis*, now the *Orb* in Languedoc; of the river *Orba*, in the Ligurian Apennines; of the Pæonian Mount *Orbelus;* and of the Georgian *Orbelian* family;—all these names may be compared with three given by Ptolemy: *Orbanassa* in Pisidia, and *Orbisene* and *Orbalissene* in Armenia Minor, where *-sene* would be the Armenian termination *śén*, found in *mez̧aśén*, 'great', and *śikaśén*, 'red', Cf., Tyr-*senus* and Por-*sena*. It signifies also 'town', and is Georgian as well as Armenian. *Orbi* means 'eagle' in Georgian; and *-ali* and *-eli*, which may appear in Orb-*elus* and Orb-*ali*ssene, are common Georgian terminations: *e.g.*, dab-*ali*, 'humilis', from *dab*-a, 'pagus'; Guri-*eli*, 'belonging to the country of Guria.' *Mount Orbelus* would probably=*Adlersberg*, but the rivers *Orba* and *Orobis* would rather mean 'swift', like as the Etruscan *aracus*, 'hawk', is the Armenian *arag*, 'swift'. Cf. *Araxes*. There is an *Arbel-horn* in the Bernese Alps." Now, in answer to this, we may observe: 1, that the proper name *Tyrsenus* is simply a poetical form of *Τυρρηνος*, which is etymologically the same word as Tusci, Thusci, Etruria, Heturia; 2, the termination in Gurieli is most probably the Turkish *ὶl* or *èyl*, country; 3, the Etruscan *aracus* is, without doubt, the same word as the Greek *ιεραξ*, *ακος*; 4, the *Orb* or *Orbis* in Languedoc, and the *Orba* in Liguria, may be compared with the *Orb* in Franconia; the *Orbe* in Switzerland; *Arva*, two rivers of North Hungary; *Arve*, name of three rivers of Spain, tributary to the Ebro; the *Aar* in Switzerland; and the *Aire* in England. *Yverdun* in Switzerland is near the mouth of the *Orbe*. The fact is all these river-names have been corrupted down from *υδωρ*, water, the medial letters, *b* and *v*, being simply digammas.

Of the three works classed together in this notice, that of Mr. Wordsworth is by far the best, and it has a positive value which neither of the others possesses. The first part of the

third lecture, which treats of the Latin alphabet, and the various changes which its letters have undergone, is good, and will be of great service to the students of the Latin language and literature. The sketch of the Elementary Age of Latin Literature is of great interest, particularly that portion of it relating to the *Annales* and *Fasti*, and to the Code of the XII Tables.

R. S. C.

Art. XI.—MATTER AND SPIRIT.*

It requires considerable courage in the present day, when physical science has almost entirely superseded philosophy in its influence over the minds of the leaders of thought, to write in support of a system which denies the very existence of such a substance as matter. This is, however, what is done from time to time; and Mr. Doubleday has now entered the controversial arena in support of Bishop Berkeley's famous theory. If he can convince any of his readers of its truth, he will, indeed, have achieved a great triumph. In his preface, Mr. Doubleday says: "No one can be more entirely aware than is the author of these pages of the utter feeling of blank incredulity with which the theory of Bishop Berkeley, when first stated, is invariably received, even by persons not unaccustomed to metaphysical speculations. So directly opposed is it to all ordinary notions, that there are intellects to which no clearness of statement can render it even comprehensible."

We have no intention of entering fully into the argument by which this incredulity is sought to be removed; but we will show what is the ultimate conclusion of the Berkeleyian philosophy, and the general reasoning by which it is supported, pointing out where we think its weakness lies. The ultimate conclusion of this philosophy may be stated in Mr. Doubleday's own words. "It destroys and renders impossible all atheistical notions or doctrines, inasmuch as it proves that the Creator is,

* *Matter for Materialists:* a Series of Letters in Vindication and Extension of the Principles regarding the Nature of Existence of the Right Rev. Dr. Berkeley. By Thomas Doubleday. London: Longmans, Green, and Co. 1870.

immediately or ultimately, the author of all our sensations, impressions, and perceptions, of every kind and description whatsoever." The real aim of Berkeley was, undoubtedly, to prove the existence of God, by showing that such existence is absolutely necessary to the explanation of mental phenomena. It is clear that, before the latter point can be established, the non-existence of "matter" must be proved, and this, therefore, is the essential part of the theory. "It will be found, on investigation," says our author, "that the results of all phenomena are purely mental, and reside in the effects they produce upon the mind which perceives them." From this it is inferred that, as the only use of matter could be to act as the medium of conveying impressions to the mind, which impressions may "be conveyed to the mind either by the immediate act of God, or mediately, by the ministration of lower orders of immaterial beings, matter becomes a superfluity, and being so, its existence becomes, in the highest degree, improbable." This reasoning is curiously hypothetical, and requires the assumption to begin with, that life and mind existed on the earth (supposing it to exist) from the very beginning of its history. The real argument in favour of Berkeley's system is, however, more direct. It is thus stated by Mr. Doubleday: "It must be allowed on all hands, by materialist and immaterialist, that we have bodily impressions, visible and tangible. If, then, we be absolutely driven to abandon the notions that these impressions have their source in material substances, we must, by the same necessity, be forced to conclude that they are the results of immaterial agency of some kind."

The proof of the truth of the immaterial hypothesis is, therefore, indirect, and the only way in which it can be established is by showing "that the opposite, or material theory, necessarily involves so many plain contradictions and manifest absurdities" that it cannot be true. This is sought to be proved by reference to the ideas of space, time, and motion, which are declared to be inseparably connected, not only with each other, but also with "all our ideas of visible and tangible existences," and to exist only in our own minds, being given to us as instruments whereby we may receive the ideas of these existences; and then by showing that the so-called qualities of matter are only affections of the mind, or inferences from such affections. This conclusion

would seem to follow from the fact that material substance would require for its own existence, that of space, which is supposed to be only an idea found in the mind itself. In subsequent chapters, Mr. Doubleday examines the theory of atoms, endeavouring to prove that neither these nor the so-called organic germs have any real existence, and unfavourably criticises the atomic and undulatory theories of light.

Most of the reasoning against the existence of matter is founded on certain supposed difficulties connected with the idea of space. These difficulties are, however, created by the immaterialists themselves, and are all founded on the impossibility of apprehending space in the abstract. From this it is assumed that space does not exist, and, therefore, that there is no such state as motion, and no such substance as the matter supposed to be moved. All this is pure assumption, and a line of reasoning the reverse of that used may be employed to establish the existence of everything that is excluded. Thus Mr. Doubleday says: All objects having shape, tangibility, colour, smell, or motion, must exist in space. The idea of space, therefore, is requisite for our perception of the whole of them," and is inseparably connected with all our ideas of such objects. Among these are included our own bodies and limbs, the idea of which we cannot dismiss. "But the impression of our own body, as an existence, requires that of space. Hence we cannot dismiss that of space, which that of our own bodily existence requires to be present." The idea of space, therefore, is necessary to an embodied being, and although purely relative at first, it may be extended in thought so as to become absolute, that is, unlimited. As against those who believe in the existence of an Absolute Being, the formation of such an idea, indefinite though it must necessarily be, is in reality a proof of the actual existence of infinite space. Mr. Doubleday may, however, object—"It is quite possible, by a strong effort of mind, to conceive the whole material universe, ourselves included, to be annihilated and made to vanish. In that case what would remain? A universal nothing, destitute of qualities of any kind. To say that space would still remain is a gratuitous assertion." To do this would, indeed, require a strong effort of mind, since it would suppose the annihilation of Deity himself, and it would be much easier to form the idea of infinite space. This idea may be, and no doubt is,

as necessary to the divine mind as that of relative space is to the action of the human mind in relation to external phenomena, and contrary to the assumption made by immaterialists, analogy requires us to believe that space, not abstract, but absolute, is essential to the very existence of the Deity himself. Mr. Doubleday's reasoning rests, in reality, chiefly on a confusion between "infinite" and "abstract" ideas, which have nothing in common, the latter being simply a metaphysical term, while the former expresses an endless series of possible phenomenal existences.

It might be thought that a simple statement of the conditions of the inquiry would be a sufficient answer to the arguments of those who deny the existence of matter. The notion that there is no real material basis for such a series of phenomena as that embraced in the development of the grown man from the fœtus, or in the evolution of what is usually understood by "civilisation," even although its material effects "resolve themselves into food and shelter," and that the phenomena are the result of certain impressions on the mind, made by the Deity, or by certain immaterial beings, is simply absurd. The real value, however, of such a book as Mr. Doubleday's, is to act as an antidote to the views of the opposite school of thought, which teaches that the only real existence is "matter." The arguments of the materialists are just as inconclusive as those of their opponents, and the reasoning by which Mr. Doubleday seeks to prove the necessary existence of mind may be read with considerable profit, when due allowance is made for the extreme opinions he himself holds.

There is one ground of reconciliation between immaterialists and the materialists—that which resolves the "substance" of the latter into force, this force being simply the spiritual being of the former. The objective world is equally non-real in both cases, and hence the objections which can be urged against the existence merely of mind are equally applicable to the notion of the reality only of force. In the resolution of all matter into "force," there is as great an assumption as in the resolution of all objective phenomena into mere mental impressions. Mr. Herbert Spencer has avoided this mistake, and he seeks to establish that "matter" and "spirit" are only different names for one and the same substance, the real nature of which we can never know. Mr. Spencer's theory, however, requires the exis-

tence of "force" as well as of this substance, and we may be tempted to see in the former simply the activity throughout the material substance of a spiritual, or shall we say, a "vitalising" principle which inheres in it. In the existence of such a vitalised substance throughout the universe we have the only possible reconciliation of the material and spiritual hypotheses, and by it alone can the evolution of such a being as man be explained.

ART. XII.—THE MOABITE STONE.*

Perhaps some apology might be almost needed for introducing any account of the Moabite Stone into this Journal, but before long it will, we think, be seen that this extraordinary discovery has an anthropological bearing and interest, anthropology itself being a sort of central science, with which most departments of human knowledge have more or less connection.

This inscribed stone was first discovered by Mr. F. Klein, of the Church Missionary Society, in the summer of 1868. He had made a journey from es-Salt to Kerak, over a country very rarely visited by Europeans. He arrived at Diban on the 19th of August, and was told of the stone by Sheik Zattan, Sheik of the Beni Sachr, who said it was near. It is three feet five inches high, rounded at the top and bottom, and one foot nine inches in width and thickness. The stone is a piece of black basalt, and has an inscription upon it in ancient characters.

The Land of Moab, so called from Moab, the son of Lot, lies on the east and south of the Dead Sea, and is now called Kerak. It is at present wild, and inhabited mostly by wandering Arabs.

Mr. Klein informed Dr. Petermann, of Berlin, of his discovery, and they strove to secure the stone for the Berlin Museum, through the Prussian consul at Jerusalem. Captain Warren, of the Palestine Exploring Society, was informed of the exist-

* *The Moabite Stone:* a Fac-simile of the Original Inscription, with an English Translation, and a Historical and Critical Commentary. By Christian D. Ginsburg, LL.D. London: Longmans and Co. 1870. 4to.

ence of this inscribed stone and perceived its importance, but appears not to have taken any steps to obtain it, since he understood the Prussians were moving in the matter. M. Clermont-Ganneau, French consul at Jerusalem, was not deterred by such knowledge, and made an offer of twenty medshidjes, about £375, for the stone, to the Arabs. As Dr. Ginsburg feelingly says, "we, as good men of business," can understand that the Arabs would now make the most of it. They disputed among themselves its ownership, although it seems to have been used as a charm by the tribe; and at length they heated the stone and then threw cold water upon it to split it into pieces, so that each family might have a fragment to place in its granary, as a charm to bless their crops. Dr. Ginsburg attributes the cause of this frightful fracture of the stone to the indiscreet interference of the French consul, and his desire to secure it, instead of allowing it to fall into the hands of the Prussians. Nevertheless, the author is not at all inclined to detract from the ability and learning displayed by M. Ganneau in decyphering the inscription. He also says that M. Ganneau was the first to recognise the immense importance of the monument, yet he has not the candour to ever mention the name of Mr. Klein, its discoverer. This jealousy of Prussian influence, by a Frenchman, may be well understood in December, 1870.

Although the stone was broken up and its fragments distributed amongst the Arabs, most of these have been recovered, and Dr. Ginsburg is able to give a fac-simile of the whole stone, *reduced to one third*, as a frontispiece to his memoir. This restoration is produced from various materials, beginning with an injured impression taken in paper when the stone was complete, which was taken by a young Arab, Yaqoab Caravacea, who was sent to Dibon with two mounted horsemen by Ganneau; and another taken from the two large fragments into which the stone was broken, taken by the Adwan of Captain Warren, together with different fragments, or impressions, from them, rubbings, photographs, etc. Dr. Ginsburg tells us that the stone is now in the possession of M. Ganneau, at Jerusalem, and that of the Palestine Exploration Society. Speaking of M. Ganneau's investigations respecting the inscription, Dr. Ginsburg is able to say that "this young French *savant* has performed his task in a most scholarly, careful, and conscientious manner, and that his text can be relied upon."

The Moabites were of the same race and speech as the Hebrews, but not of the same religion. Their religion was a kind of nature worship. Their national deity was Chemosh, or as Dr. Inman in his learned "Ancient Faiths" prefers, Camus. This god Chemosh is mentioned in the Second Book of Kings, where Omri, Mesha, and the Moabites, are all alluded to. Their language was a dialect allied to the Phœnician and to the Hebrew, sometimes resembling the one, sometimes the other. The characters in which the inscription upon the Moabite Stone is written are those called "Phœnician," from the supposed fact that the Phœnicians invented them.

It is probably desirable that we should give Dr. Ginsburg's translation of the inscription upon this ancient stone. It is as follows:—

"I, Mesha, am son of Chemoshgad, King of Moab, the Dibonite. My father reigned over Moab thirty years, and I reigned after my father. And I erected this stone to Chemosh at Kahara [a stone of] [Sa] lvation, for he saved me from all despoilers, and let me see my desire upon all my enemies; and Om[r]i, King of Israel, who oppressed Moab many days, for Chemosh was angry with his [la]nd. His son succeeded him, and he also said, I will oppress Moab. In my days he said, [Let us go] and I will see my desire on him and his house, and Israel said, I shall destroy it for ever. Now Omri took the land Medeba and occupied it, [he and his son and his son's] son, forty years. And Chemosh [had mercy] on it in my days, and I built Baal Meon, and made therein the ditch, and I [built] Kirjathaim. For the men of Gad dwelled in the land [Ataro]th from of old, and the K[ing of I]srael fortified A[t]aroth, and I assaulted the wall and captured it, and killed all the wa[rriors of] the wall, for the well-pleasing of Chemosh and Moab; and I removed from it all the spoil, and [offered] it before Chemosh in Kirjath; and I placed therein the men of Siran, and the me[n of Zereth] Shachar. And Chemosh said to me, Go, take Nebo against Israel. [And I] went in the night, and I fought against it from the break of dawn till noon, and I took it, and slew in all seven thousand [men, but I did not kill the women and maidens], for [I] devoted [them] to Ashtar-Chemosh; and I took from it [the ves]sels of Jehovah and cast them down before Chemosh. And the King of Israel fortif[ied] Jahaz, and occu-

pied it, when he made war against me; and Chemosh drove him out before [me, and] I took from Moab two hundred men, all chiefs, and fought against Jahaz, and took it, in addition to Dibon. I built Karcha, the wall of the forest, and the wall of the city, and I built the gates thereof, and I built the towers thereof, and I built the palace, and I made the prisons for the men of . . . . . with[in the] wall. And there was no cistern within the wall in Karcha, and I said to all the people, 'Make for yourselves every man a cistern in his house.' And I dug the ditch for Karcha with the [chosen] men of [I]srael. I built Aroer, and I made the road across the Arnon; I built Beth-Bamoth, for it was destroyed; I built Beza, for it was cu[t down] by the fifty m[en] of Dibon, for all Dibon was now loyal; and I sav[ed] [from my enemies] Bikran, which I added to my land; and I bui[lt] [Beth-Gamul], and Beth-Diblathaim, and Beth-Baal-Meon; and I placed there the Mo[abites] [to take possession of] the land. And Horonaim dwelt therein . . . . . And Chemosh said to me, 'Go down, make war against Horonaim, and ta[ke] it' . . . . . Chemosh in my days year and I . . . . . "

Hence it appears that it "records the wars of Mesha, King of Moab, with Omri, King of Israel, and his successors. Having given his own name and that of his father as well as the duration of his paternal reign, Mesha states that he erected this monument to his national god, Chemosh, as a token of gratitude for deliverance from the forty years' oppression by Omri, King of Israel, and his successors." The second part celebrates the public works undertaken by Mesha after his deliverance from his Jewish oppressors. The third part records his successful wars against the Horonajim, or the Edomites, which he undertook by the express command of Chemosh. Omri is the King of Israel mentioned in the Bible (1 Kings xvi, 16-28, etc.) The resubjugation of Moab by Omri took place in the days of Mesha (*circa* B.C. 924). The history of the events which immediately preceded the erection of this stone is given in 2 Kings iii, 4-27. Mesha, King of Moab, who paid a tribute to the king of Israel, revolted. When Jehoram succeeded to the throne of Israel he secured the help of Jehoshaphat, King of Judah, and of the King of Edom, and marched against Mesha. On their approach to Moab the armies were in danger of perishing for want of

water. Elisha, the prophet, was found to be with the host, and the three kings went to him, entreated him to inquire of Jehovah, who promised a plentiful supply of water and their success. When the abundance of water arrived, the sun shining upon it made it look red to the Moabites, who took it for blood, and rushed forward thinking their opponents were slain, when they themselves were routed and slaughtered. Mesha made a vigorous attempt with seven hundred men to break through the invading army, and when beaten back he offered up his eldest son, the heir to the throne, as a burnt offering to Chemosh, upon the wall of the city of Kirharraseth, in the sight of the invaders. "This sacrifice had the desired effect, for the invaders were severely chastised, or, as it is euphemistically expressed, 'and there was great indignation against Israel, and they departed from him and returned to their own land.'" However difficult it may be to explain this expression, it appears to be without doubt that it was this deliverance of his land from Omri and his successors that induced Mesha to set up this inscribed memorial stone at Dibon, the fortified capital of the King of Moab, where it has just been discovered, almost three thousand years afterwards. Although there are some difficulties in reconciling the history given in the 2 Kings with the inscription, it must not be forgotten that these documents describe the same events from opposite sides—the one is the account of the Israelite invaders and conquerors, and the other that of the subdued and afterwards restored Moabites. There seems to be no room whatever to question that both documents refer to the same period, the same persons, and the same occurrences.

This lapidary monument is the oldest epigraphic document in this species of writing. Its age is about 920—30 B.C. The time of Homer and Hesiod is stated to be about B.C. 850—776. The Moabite Stone is three centuries older than the sarcophagus of Eshmunazar (B.C. *circa* 600), hitherto considered the most ancient inscription of any considerable length. We know that Chemosh, mentioned upon the stone, was the national god of the Moabites, for Solomon had Moabite wives, who had sufficient influence over him as to induce him to erect a temple to Chemosh upon the mount of Olives, at Jerusalem.

There are some points which will be perceived to be of anthropological interest in Dr. Ginsburg's lucid account of the Moabite

Stone. Into the light thrown by this inscription upon the different more recondite questions relating to the Hebrew writings, we are not able to enter here. It is the opinion of Dr. Ginsburg that the importance of it to the language of the Old Testament cannot be overrated. Its palæographical importance is highly worthy of notice. The author says, "in this respect this triumphal pillar is perfectly peerless, in as much as we here obtain an alphabet which is more than a century and a half older than that in any other epigraphic document containing the same species of writing; and it is three centuries older than the sarcophagus of Eshmunazar, which has hitherto been considered the most ancient inscription of any considerable length. The characters of the Moabite stone are "Phœnician," as they are generally called, from the supposed fact that the Phœnicians invented them, or that they were peculiar to them."

It is Herodotus who relates that the Phœnicians who came with Cadmus introduced a knowledge of letters among the Greeks. Pliny declares that the Cadmean characters were only sixteen in number, and that others were added by Palamones and Simonides. Hence Dr. Donaldson and others have concluded "that the original Semitic alphabet contained only sixteen letters." The Moabite Stone proves, however, that the Semitic alphabet, at the period at which the inscription was engraved, really B.C. 903 to 1000, had twenty-two letters, which were altogether taken over by the Greeks. What is still more remarkable is, that the archaic Greek characters, in the earliest known inscriptions, are mostly similar to, if not identical with, those upon the Moabite Stone.

Dr. Ginsburg renders his work as complete as possible by including at the end the different versions of the inscription, published by six different scholars of different countries.

CONTEMPORARY LITERATURE.

THE MODERN THINKER: An Organ for the most advanced Speculations in Philosophy, Science, Sociology, and Religion. New York: D. Goodman, Editor and Publisher. 1870.

THE following extract from the introductory "Egotisms" of the editor will show the position intended to be occupied by this new American periodical. "The projector of *The Modern Thinker* is a Positivist, of the school of Auguste Comte. He does not, however, unqualifiedly accept all the speculations of that great philosopher. It is his desire to be liberal, and to open the pages of this publication to the representatives of all the advanced schools of thought, especially to the adherents of Herbert Spencer and John Stuart Mill." The questions treated of in the present number are full of interest, and they are discussed with ability, and with praiseworthy absence of dogmatism. Amongst the best articles are "The Last Word about Jesus," by John Fiske; "The Positivist Problem," by Fred. Harrison; "The Future of Marriage," by D. G. Croly; "Scientific Propagation," by John H. Noyes; "and Comte's Insanity," by Prof. André Poëy. As most of the subjects discussed are speculative, there are necessarily many points in which we disagree with these writers. We trust, however, that the enterprising editor will meet with sufficient encouragement to lead to the issue of a second number. We should be glad, however, to see the printing in colours on coloured paper discontinued. We do not think such a course would be inconsistent with positivism.

THE PEOPLES OF TRANSYLVANIA: By Richard Stephen Charnock, Ph.Dr., etc. London: Trübner and Co. 1870.

THIS pamphlet, which embodies a paper read before the Anthropological Society of London, on the 4th May, 1869, contains a large collection of facts relating to the various peoples who make up the inhabitants of Transylvania. The account of the German settlers in that country will now be read with much interest. The details given as to the gipsies of Transylvania are good. Like the gipsies of most other European countries, they excel chiefly in music and smith-work. The list of works of reference supplied by Dr. Charnock is of great value.

AN ADDRESS DELIVERED IN THE DEPARTMENT OF ETHNOLOGY AND ANTHROPOLOGY. (British Association for the Advancement of Science. 1870): By John Evans, F.R.S., F.S.A.

LITTLE need be said to recommend this address, which, coming from the pen of so accomplished an anthropologist as Mr. Evans, is sure to be well considered. The number of topics touched upon is necessarily great, and this may perhaps account for the somewhat inadequate treatment which some of them have received. Such are the subjects of morals and religion, both of which are capable of a strictly scientific

treatment. When this is applied to them great light will be thrown on the development of the human mind. The law of "evolution" is just as apparent in the phenomena of the moral nature as in the more purely intellectual phenomena to which Mr. Evans has almost exclusively confined his attention.

OLD SHOWERS: By Carribber. London: Kerby and Son. 1870.

THIS little book, which is intended chiefly for young persons, gives an account and explanation of the falls of insects, fishes, and lizards; soot, sand, and ashes; red rain and snow; meteoritic stones; and various other bodies. The idea of compiling such a work is ingenious, and the strange facts mentioned are so well treated, that if published in a more detailed form the work would no doubt be well received by the reading public.

ANCIENT MANORIAL CUSTOMS, TENURES, ETC., OF THE COUNTY OF ESSEX: By Richard Stephen Charnock, Ph.Dr., etc. London: Longmans, Green, and Co. 1870.

THIS pamphlet displays the painstaking antiquarian research which is so characteristic of the works which proceed from Dr. Charnock's pen. Some of the manorial customs of Essex, as of other English counties, are so absurd, that we are inclined to believe that they were instituted in the "jocular" spirit to which Dr. Charnock seems inclined to refer the *Flitch of Bacon* custom of Little Dunmow. Our author refers to the information collected by the late Dr. Wm. Bell as to the ancient superstitious use of the flitch. This is very curious. The flitch here had some relation to "fecundity," and it seems to have been offered by the Prussians to their god Percunnos down to a comparatively recent period. Doubtless the Dunmow custom had reference to the idea of fruitfulness in the married state, although it ultimately received another application.

THE PICTURE GALLERY OF THE NATIONS: For the Young. London: The Religious Tract Society.

THE handsomely illustrated work thus entitled is a sign of the times. The popular interest in the inhabitants of other lands is gradually increasing, and such works as the present one, although having little scientific pretension, aid in developing the newly-acquired anthropological taste. On the whole, the engravings give a very good idea of the features of the peoples delineated. We cannot speak so well of the text. Take, for instance, the following reference to the Irish: "They are a strong and active people, are fair and healthy in complexion, and, when young, commonly have *flaxen hair* and *dark blue eyes.*" The italics are our own.

HISTORY OF THE DOCTRINE OF THE DEITY OF JESUS CHRIST: Translated from the French of Albert Réville. London: Williams and Norgate. 1870.

WE commend this small work to the perusal of all those who take an

interest in the development of Christian dogma. It contains a masterly summary of the various phases through which the doctrine of the Deity of Jesus Christ has passed, from the rise of Christianity to the present period, and it may be read with profit by both those who accept and those who reject its general conclusions.

THE PROPENSITORIAL ZODIAC, OR, PSYCHONEUROLOGY OF THE MENTAL FACULTIES, AS GOVERNED AND DEVELOPED BY THE ANIMAL NATURE; SHOWN BY A DEMONSTRATIVE CHART ENTITLED AN ANTHROPOLOGICAL CATHOLICON: By Robert T. Stothard. London: James Burns. 1870.

THE system of psychoneurology which Mr. Stothard seeks to establish, and which he explains by reference to a number of drawings of the four organs of special sense: the eye, the nose, the mouth, and the ear, is founded on the propensitorial zodiac. This ingenious "calendar of the component parts of man" is intended to be "demonstrative of the effect of the track of the sun through the twelve months, establishing certain propensities during the period of parturition before birth and after, open to mischief by the indiscriminate system of scholastic discipline interfering prematurely with the mental faculties, they being the only basis for man's internal activity from the memory of the brain." We recommend this chart to the attention of the Educational Board.

BIBLIOGRAPHY.

ENGLISH.

Baring-Gould, S. Origin and Development of Religious Belief, Part ii, Christianity. Rivingtons. 15s.

Beale, Lionel, M.D., F.R.S. Disease-Germs. London: John Churchill and Sons. 3s. 6d.

Beale, Lionel John, M.R.C.S. Health and Longevity. Second edition. London: Churchill and Sons. 3s. 6d.

Bird, Rob., M.D., Bengal Army. Physiological Essays: Drink-Craving; Differences in Men; Idiosyncrasy; and the Origin of Disease. London: Trübner and Co. 7s. 6d.

Bottrell, Wm. Traditions and Hearthside Stories of West Cornwall. London: Trübner and Co. 6s.

Byington, Rev. Cyrus. Grammar of the Choctaw Language. London: Trübner and Co. 12s.

Callaway, the Rev. Canon, M.D. The Religious System of the Amazulu. Part iii. London: Trübner and Co. 4s.

Carr, Capt. M. W. Descriptive and Historical Papers relating to the Seven Pagodas on the Coromandel Coast. London: Trubner and Co. 25s.

Clissold, Rev. A. The Prophetic Spirit in its relation to Wisdom and Madness. London: Longmans and Co. 7s. 6d.

Cunningham, Alexander, Major-General. The Geography of Ancient India. London: Trübner and Co.

Engelhardt, Conrad. Denmark in the Early Iron Age. (New Impression.) London: Williams and Norgate. 31s. 6d.

Forbes, D. On the Aymara Indians of Bolivia and Peru. London: Taylor and Francis.

Ginsburg, C. D. The Moabite Stone, with a Facsimile. London: Longmans and Co. 10s. 6d.

Hanson, the Right Hon. Sir Rich. The Jesus of History. London: Williams and Norgate. 12s.

Hardy, R. Spence. The Legends and Theories of the Buddhists compared with History and Science. London: Williams and Norgate. 7s. 6d.

Haugh, Martin, Ph.D. Essay on the Pahlavi Language. London: Trübner and Co. 3s. 6d.

Huxley, T. H., LL.D. Lay Sermons, Addresses, and Reviews. London: Macmillan and Co.

Kielhorn, F., Ph.Dr. Grammar of the Sanskrit Language. London: Trübner and Co. 10s. 6d.

Lenormant, F., and Chevallier, E. The Student's Manual of Oriental History. London: Asher and Co. 12s.

Low, Lieut. C. R. The Land of the Sun: Sketches of Travel, etc. London: Hodder and Stoughton. 5s.

March, Francis A. Comparative Grammar of the Anglo-Saxon Language. London: Sampson Low and Co.

Millingen, Major F. Wild Life among the Koords. London: Hurst and Blackett. 15s.

Mitford, A. B. Tales of Old Japan: Translated with Copious Illustrations and Comments. London: Macmillan and Co.

Moule, Rev. A. E. Chapters on China and the Chinese. London: Seeley. 3s. 6d.

Müller, F. Max. Chips from a German Workshop, vol. iii. London: Longmans and Co. 16s.

Naphegyi, G., M.D., A.M. The Album of Language. London: Trübner and Co. £2 10s.

Palliser, Mrs. Bury. Historic Devices, Badges, and War-cries. London: Sampson Low and Co. 21s.

Scoffern, J., M.B. Lond. Stray Leaves of Science and Folk-lore. London: Tinsley Brothers. 12s.

Spencer, Herbert. Principles of Psychology. Second Edition. London: Williams and Norgate. 18s.

Steere, Edward, LL.D. Handbook of the Swahili, as spoken at Zanzibar. London: Bell and Daldy. 7s. 6d.

Steere, Edward, LL.D. Swahili Tales: With an English Translation. London: Bell and Daldy. 7s. 6d.

Taylor, Mary. The first Duty of Women. London: Faithfull. 2s. 6d

Wilson, Captain, R.E., and Captain Warren, R.E. The recovery of Jerusalem. London: Bentley. 21s.

Yule, Colonel. The Travels of Marco Polo. A new English Version. With copious notes, maps, and illustrations. Two vols. London: Murray.

AMERICAN.

Agassiz, Louis, and Ch. Frederick Hartt. Scientific Results of a Journey in Brazil. 21s.

American Association for the Advancement of Science. Proceedings of Eighteenth Meeting, 1869. Cambridge, Mass. 12s.

Foot, Edward B., M.D. Plain Home Talk about the Human System; the Habits of Men and Women; the Causes and Prevention of Disease; our Sexual Relations and Social Natures; embracing Medical Common Sense, etc. Illustrated. New York. 16s. 6d.

Guyot. Guyot's Geographical Series. The Earth and its Inhabitants. Intermediate Geography. New edition, with supplement and new maps. Illustrated. (New York.) London. 7s. 6d.

Jackson, Jas. C. American Womanhood; its Peculiarities and Necessities. (Dansville.) London. 7s. 6d.

Leonowens, Anna Harriette. The English Governess at the Siamese Court. London: Trübner and Co. 12s.

Scholten, J. H. A Comparative View of Religions. Translated by F. T. Washburn, Boston, U. S. A. Crossby and Damrell.

Squier, E. J. Honduras: Descriptive, Historical, and Statistical. London: Trübner and Co.

FRENCH.

Chac, A. De. Dictionnaire d'Etymologie Daco-romane. Eléments Latins comparés avec les autres langues romanes. Frankfurt, A. M.

Gravier, Gabriel. Decouvertes et Etablissements de Cavelier de la Salle, de Rouen, dans l'Amerique du Nord. Paris. 15s.

Passy, M. H. Des Formes du gouvernement, et des Lois qui les régissent. Paris: Guillaumin.

Proudhon, P. T. Historie du Mouvement constitutionnel au XIXe siècle. Paris: Lacroix.

GERMAN.

Bergmann, J. Grundlinien e. Theorie d. Bewusstseins. Berlin: Loewenstein.

Büchner, L. Die Stellung der Menschen in der Natur. Leipsic: Thomas.

Kaempf, S. J. Die Inschrift auf dem Denkmal Mesa's, Königs von Moab, Prag: Tempsky.

Kaulich, W. Handbuch der Psychologie. Graz: Verl. d. Leykam.

Körner. Der Menschengeist in seiner personlichen und Weltgeschichtlichen Entwickelung. 1ste Abtheilung. Leipsic: Thomas.

Lübke, W. Geschichte der Plastik. Zweite stark vermehrte und verbesserte Aufl. 1 Band. Leipsic: Seemann.

Rumpelt, H. B. Die Deutschen Pronominer und Zahlwörter, historisch dargestellt. Leipsic: Vogt.

Thomsen, Wilh. Ueber den Einfluss der germanischen Sprachen auf die finnisch-lappischen. Eine sprachgeschichtliche untersuchung. Translated from the Danish by E. Sievers. Halle.

Virchow und Hirsch. Jahresbericht über die Leistungen und Fortschritte in der Anatomie und Physiologie. Berlin: Hirschwald.

Von Raumer, Rud. Geschichte der Germanischen Philologie. München; Oldenbourg.

Wrede, Adolf von. Reise in Hadhramaut, Beled Beny 'Yssà und Beled el Hadschar. Herausgegeben von Heinrich Freiherr von Maltzan. Braunschweig.

SCIENTIFIC SOCIETIES.

American Association for the Advancement of Science.—The 19th meeting of this Association was held at Troy, New York, August 17-24th, 1870. The chief papers on anthropological subjects read were "On the Distribution of the Native Tribes of Alaska and the adjacent Territory," by W. H. Dall, and "On the Botocudos of Brazil," by Charles F. Hartt. Mr. Dall, after criticising unfavourably the usual division of the natives of Alaska, said that they may be divided into two great groups, "those which belong to the aboriginal American stock, whom we are accustomed to designate as Indians; and those scattered along our northern coasts, from Greenland to Behring's Strait, and for whom we have as yet no general term, but who have been called Eskimo Aleutians; and on the Asiatic side of the Straits, Tuski and Sedentary Chuckchees." These Mr. Dall proposes to call Orarians (*ora*, a shore), and he distinguishes them (1) by their language; (2) by their distribution, always on islands, or confined to the sea-coasts; (3) by their habits, more maritime and adventurous than those of the Indians; (4) by their physical characteristics. These are a light fresh yellow complexion, fine colour and broad build, and especially the largely developed coronal ridge, and an obliquity of the arch of the zygoma. These cranial peculiarities are common to all Orarian skulls, and form a ready means of distinguishing them, being only shared by the northern mound builders, who were perhaps their ancestors. The "Indians" who dwell near these people call them "Uskeemé," or sorcerers. The Orarians are divided into three lesser groups, the Eskimo, the Aleutians, and the Tuski; and these are subdivided into many tribes, which were particularised in Mr. Dall's paper. The Tuski differ from the Eskimo, with whom they are at enmity, in not wearing *labrets*, and in many particulars of their mode of life. They extend along the shores of the country between Anadys Gulf, and Kuluchinskaia Bay, and Behring Strait. Mr. Dall laments the almost utter loss of the traditions and ancient religious rites of certain of these tribes, especially amongst the Eskimo and the Aleutians. These rites have been totally suppressed by the Russian authorities, and the tradition of them remains only with a few old men. Mr. Dall gave a short account of some researches into the

structure of the Eskimo languages, showing that the radical words of the different dialects, from Greenland to Behring Straits, are essentially the same, while many of the adjectives, verbs, and prepositional terminations, differ in tribes which are closely adjacent. Mr. Dall was not able to group the "Indians" so well, as our knowledge of them is far from complete, but he enumerated fourteen or fifteen distinct tribes. The vocabularies he has compiled show the relations existing between the several dialects. Shamanism is common to both Indians and Eskimo. The system of *totems*, according to Mr. Ross, exists in some of the Indian tribes, but is falling into disuse. In some tribes there are, or were, four *totems*, the crow, the wolf, the whale, and the eagle, in others only three. Among the Eskimo there is nothing of the kind.—"On the Botocudos of Brazil," Mr. Hartt said that the Botocudos are of middling height, stout in body, but thin and generally slight in the extremities. They have the colour of light mulattoes, eyes generally dark, rarely blue, cheek-bones not very prominent. The custom of perforating the ear and lip is dying out. The Botocudos go naked, but sometimes paint the face and body with annatto, and a black vegetable dye. They use long bows and arrows, and formerly had cutting instruments of stone. They have only one wife, who is treated very brutally. They believe in bad spirits, great and small, but they appear to have no idea of a good God. The dead are buried in or near the wigwam, and a fire is sometimes made over the grave to keep off bad spirits. They are strongly suspected of cannibalism. The Botocudos have been almost exterminated by Brazilian cruelty and rum drinking. They are now confined to the forest between Rio Doce and the Rio Pardo. They resist civilisation and Christianity, and are sunk in the lowest barbarism.

Literary and Philosophical Society, Manchester.—At the meeting of this Society, held October 4th, Mr. Boyd Dawkins gave an account of the recent work done at Victoria Cave, near Settle. Among the remains connected with man in the lower deposit, were found flint flakes and a bone harpoon, resembling that used by the natives of Nootka Sound. The comparatively late date of the upper stratum was confirmed by other remains. The presence of several spurs of the cock, showed that the domestic fowl was used for human food. The most striking object discovered was an enamelled sigmoid fibula of bronze.

The Ethnological Society of London.—At the meeting of this society, held November 8th, a carved wooden implement, found beneath twenty-seven feet of guano, in the Island of South Guanape, was exhibited and described by Mr. Josiah Harris. Colonel A. Lane Fox exhibited a rudely worked stone implement from Borneo, being the first which has reached this country from that locality. A paper was then read "On the Kimmerian and Atlantean Races," by Mr. Hector McLean. The author described the Atlanteans as a dark race, forming a considerable ingredient in the population of Spain, southern and central France, South Wales, and the south and west of Ireland

and Scotland; whilst the Kimmerians were a fair people, often of tall stature, with gaunt features, ruddy complexion, grey eyes, and red or yellow hair. These Kimmerians occupied the British Isles, and mixed with the Atlanteans previously to the arrival of the Scandinavians and Teutons. By means of the names of places, the author traced them in their migrations westwards, from their original home between the Don and the Volga. The author concluded that the present population of England is more truly British, or Kimmerian, than the Welsh, and that our language is not the direct descendant of the language of the Saxon conquerors, but the descendant of both that of the conquerors and a kindred native language.—November 22nd. A paper by Dr. Bleek "On the Concord, the Origin of Pronouns, and the Formation of Genders or Classes of Nouns," was read. The author stated that the classes or genders in the sex-denoting languages originally depended, not upon the meaning of the nouns, but upon their representative particles, which, in these languages, were primarily at the end of the nouns. These genders were, from an originally large number, gradually reduced, until in the Aryan languages they were mainly two—one with the representative element, U, which is called the *masculine* class, and the other with the representative element, A T I, which is named the *feminine* class. The *neuter* appears to be a later development, into which, however, an original common plural gender, with the termination, A N I, may have been incorporated. To these endings the case-terminations were affixed, and through pressure of the latter the original marks of gender have frequently been obscured. The concord was at first due to the presence of these representative elements of the nouns in their pronominal character.—13th December. Mr. Grove, Q.C., exhibited twelve skulls from the crypt of Rothwell Church, Northamptonshire. Professor Busk described the skulls as being smaller than those of the existing race, and many exhibit an extreme lowness of forehead. Some of them resemble Professor Huxley's "river-bed" type. Sir John Lubbock, Bart., read a paper "On Stone Implements from Africa," in which he described certain implements of the spear-head type, from the Cape of Good Hope, and some small polished celts brought by Mr. Winwood Reade from near Accra, on the Gold Coast. Mr. C. Spence Bate, F.R.S., read his second report "On the present Condition of the Pre-historic Antiquities of Dartmoor."

ANTHROPOLOGICAL NOTES.

Auguste Comte, in 1852, said, "La sociologie peut être aisement conçue comme absorbant la biologie à titre de préambule, et la morale à titre de conclusion. Quant le mot *Anthropologie* sera plus et mieux usité il deviendra préférable pour cette destination collective, puis qu'il signifie litéralement *Etude de l'homme.*"—*Catéchisme Positiviste.*

PROFESSOR RAWLINSON in his *Manual of Ancient History* (1870), thus writes, "Anthropology, though not history proper, is akin to it, and is a science of which the historical student should not be ignorant. It treats of man prior to the time when "history" takes him up, and thus forms, in some sort, the basis on which history rests. The original condition of man, his primary *habitat*, or place of abode, the mode and time of his dispersion, the questions of the formation of races, of their differences, and of their affinities; these, and similar subjects, which belong properly to anthropology, are of interest to the historian, and underlie his proper field."

ANTHROPOLOGICAL SECTION OF THE SOCIETY OF THE FRIENDS OF NATURE, MOSCOW.—The expedition under the charge of M. Kerzelli to the Volga, for the collection of crania, both archæological and modern, has been successful. M. Kerzelli has brought back a number of skulls of Tatars of the Volga, and others proceeding from excavations at Solgari and other places. These are to be submitted to the examination of Professor Bogdemow, the President. M. Fedtschedko still remains at Taschkend, in Central Asia, where he is collecting a number of objects interesting to naturalists. He is likely to continue in Central Asia for another two years. The collection of crania he sent from Samarcand, for the Museum of the Anthropological Society at Moscow, has been studied by Professor Bogdanow. It was formed from the cemeteries of that city and the neighbourhood, and, therefore, it cannot be definitely said which are the skulls of Uzbecks, and which are those of Tadjiks. On examination the crania were found to belong to two distinct types, examples of which we have seen. The one is distinguished for brachycephalism, and this is considered by Bogdanow to belong to the Uzbecks. The example we have had the opportunity to inspect is much deformed. It is a short broad skull, elevated in the anterior parietal region. It has a large parieto-occipital *flattening*, extending from the middle of the parietals to the tuberosity of the occipital, which flat surface is not symmetrical, but is inclined towards the right side. This, no doubt, is the result of external influences—probably habitual lying on the back in infancy, with the head upon a hard surface—upon a naturally brachycephalic skull. The other type, regarded by Professor Bogdanow as that of the Tadjicks, is decidedly dolichocephalic, with a low receding forehead, and a hatchet-shaped face.

M. A. QUETELET'S new work, now in the press, is entitled *Anthropologie, ou Traité de l'Homme.* Its appearance is looked forward to by men of science with great interest.

PERUVIAN INCA SKULLS.—We extract the subjoined passage from a letter dated January 26, 1870, written by Herr Gratrian, of Brunswick, to Chevalier von Haidinger, of Vienna:—"With regard to my palæontological researches, I beg to inform you that they are at present in a somewhat modern direction. The exploration of beds containing fossil bones, especially of the period of the mammoth, the cave-bear, &c., as well as the search after implements of the stone period, combined with cave-studies, form now my chief occupation. I have here explored a bed which has already yielded interesting

results. The acquisitions of last year include two Inca skulls from Chincha Alta, which are in a condition quite as described by Morton, and are especially distinguished by the vertical descent of the occipital bone. These skulls were, besides other curiosities, presented to me by the commander of the North German frigate *Neptune*, who obtained them at the Huacas. There is a peculiar interest attached to them in as far as these skulls were brought to the surface in consequence of the earthquake on the Peruvian coast, which happened in the month of August, 1868."—*Mittheilungen der Anthropologischen Gesellschaft in Wien.*

THE ANTHROPOLOGY OF EASTERN EUROPE.—The following notes from Dr. Latham's *Native Races of the Russian Empire* will be read with attention at the present time. The Sarmatians form one of the three great stocks to which the inhabitants of the Russian territories belong, the others comprising the Ugrians and the Turks. The Sarmatian stock includes two sub-divisions, the Slavonic and the Lithuanian. The latter embraces the Lithuanians of Lithuania, the Lets of Livonia and Courland, and the old Prussians. All Prussia proper was Lithuanic as opposed to Slavonic. To the latter branch belong, among other peoples, the Bohemians, the Poles, certain peoples in Pomerania and Silesia, and the Great and Little Russians. In the time of Charlemagne the Elbe was the western limit of the Slavonians, and the eastern one of the Germans. The old Prussians of the Lithuanic Sarmatian stock were called by the Germans Œstii (Easterlings), and by the Slavonians Gothones (Goths). According to Prætorius, the latter was a name of contempt, "accounted for by the extent to which the population to which it applied had retained their paganism against the efforts of the propagators of the Prussian Christianity." These were the Knights of the Teutonic order, who, in the twelfth century, overrun Lithuania and Pagan Prussia, and Christianised those of its inhabitants who survived. The Lets also were subjugated by a Germanic order, and the difference now between Letland and Prussia proper is only one of degree. Both are German, so far as they are not Lithuanic. The landowners of Letland are German, and its history is German. Lithuanian history, on the other hand, is Polish; Poland and Lithuania having been united in 1386. What in Lithuania is neither Lithuanic nor Russian is Polish. As the Germans moved eastward from the Elbe, they effected alliances with the Slavonians of Mecklenberg and Pomerania, and "the line of displacement that pressed upon the old Prussians was Slavono-German, or Germano-Slavonic." Thereafter "Prussia" was used as the generic name, and the old terms Œst and Goth became obsolete, or were re-applied. *Pari passu* with the Lithuanic movements from Prussia—which led to Gothic names being given to Jutland and the Danish islands, and to two Swedish provinces—"there went on certain Slavonic ones from Mecklenberg, Pomerania, and Holstein. In Holstein the evidence of a Slavonic occupancy is historic. It is all but historic in the island of Laaland. It is an inference from more than one local name in North Jutland."

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CORRIGENDA.

At page 105, note ‖, *for* "Cary", *read* "Cory".
At page 109, line 32, *for* "Haury", *read* "Hamy".
At page 275, line 30, *for* "orang", *read* "gorilla".
At page 308, note †, *for* "Erbeschreibung", *read* "Erdebeschreibung".
At page 311, line 15, *for* "*Lakus Flevo*", *read* "*Lacus Flevo*".
At page 341, line 18, *for* "genus", *read* "gens".
At page 360, *read* 1869 as the date of the meeting of the American Association for the Advancement of Science, *instead of* 1870.